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No. 4

CONCRETE STANDPIPES

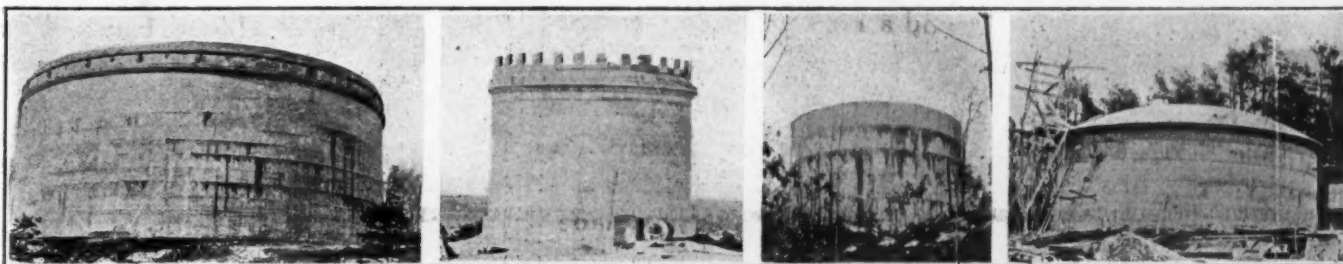
Information Concerning More Than Forty Erected in the United States—Their Advantages and Disadvantages—Causes of Leaks and Methods of Preventing Them—Experiences of Engineers, Contractors and Superintendents.

It is now sixteen years since the first concrete standpipe was constructed in this country, so far as is known. Since that time forty-two concrete standpipes have been constructed, the majority of them in New England. Municipal Journal described several of the earlier of these standpipes, the articles having appeared as follows: Attleboro, Mass., Dec. 5, 1906; Anaheim, Cal.,* Mar. 9, 1910; New Ulm, Minn.,* Aug. 3, 1910; Westerly, R. I., Sept. 21, 1910; Nov. 22, 1911; Rockland and Bridgewater, Mass., Aug. 30, 1911.

Although, as stated, the oldest standpipe (in the filtration plant at Little Falls, N. J.) was built sixteen years ago, the greater number of the tanks are only from two to five years old, only twelve having been built prior to 1910. The dates of construction are as follows: 1899—1, 1903—2, 1904—1, 1906—1, 1908—4, 1909—3, 1910—5, 1911—8, 1912—5, 1913—8, 1914—4.

Believing that the time had arrived for a comparison of experiences with the various standpipes with a view to establishing something like standard methods, the New England Water Works Association set aside one of its meetings for the discussion of this subject, with the result that a number of men who had built such tanks as contractors, engineers and superintendents for the cities or companies which had contracted for the tanks, and those who had maintained such tanks, were present and gave the result of their experiences. In addition, two papers were contributed describing experiences with standpipes at Westerly, R. I., and Attleboro, Mass. The discussion, as published in the Journal of the Association,

twelve were more than 50 feet high; and that the majority of the high ones were built during the earlier years of construction. Simpson Brothers Corporation, which has built seventeen of these standpipes, states that it is "absolutely ready to build tanks up to 110 or 115 feet high, and we can build them perfectly, but not without an interior lining." Raymond C. Allen, civil engineer of Manchester, Mass., from his experience with the Manchester standpipe and his observation and study of others, has come to the conclusion "that such standpipes as are over about 50 feet in height should be entirely waterproofed on the inside by some preparation." Mr. Simpson stated in this connection that he understood that the conditions at Manchester are exceptional, in that they fill their standpipe at 4 o'clock in the summer months and fill up to something like 60 feet of water and then stop pumping, and the water falls to 30 or 45 feet before the end of the afternoon. It was generally agreed that the changes in pressure and also in temperature which would be occasioned by frequent and considerable variations in height of water in the tank were unfavorable; and possibly the fact that such conditions are much more likely to occur in a high tank than in a low one is one of the most important reasons why the former have been objected to by some engineers. William S. Johnson, civil engineer of Boston, Mass., stated that his experience has been limited to rather low tanks, "and unless I change my opinion very materially, my future experience will have the same limitations. None of the tanks which I have built is over 40 feet in height, but they all leak more or less.



STANDPIPE AT WALTHAM, MASS.

DUXBURY FIRE AND WATER DISTRICT, MARCH, 1915.

ASHLAND, MASS., MARCH, 1915.

STANDPIPE AT CHELMSFORD.

occupies over thirty pages. We have endeavored, however, to condense the information and also to classify it according to the subjects and believe that all of the important points brought out are contained in the following abstract.

HEIGHT OF TANKS.

It will be noticed that thirteen of these tanks were less than 30 feet high, sixteen were from 30 to 50 feet high and

*These were not mentioned in the discussion of which this article is an abstract, and do not appear in the table appended thereto.

. . . I am convinced that high standpipes are much better built of steel than of concrete. . . . Until some better method of designing and constructing concrete tanks is found, it seems to me very unwise to install them to hold more than 50 feet of water."

ADVANTAGES OF CONCRETE STANDPIPES.

As to the general advisability of building such standpipes, Francis W. Dean, mechanical engineer of Boston, believed that the concrete standpipe was more permanent and attractive as a part of the landscape than a steel

standpipe. William S. Johnson, civil-engineer of Boston, said: "To be sure, steel tanks are unsightly, but so are concrete structures, discolored by leakage. The repairs on a steel tank are expensive and annoying, but they cannot be more so than the repairs to concrete tanks. As to the desirability, the evidence indicates that the concrete tanks are far from indestructible and there is much uncertainty as to how long they will really last." Stephen Litchfield, city engineer of Bath, Maine, said: "We are well pleased with the standpipe and consider it as near an approach to a permanent structure as it is possible to obtain. Instead of depreciation, as is the case when other materials are used in similar structures, we consider that this one is improving." Charles L. Bowker said: "Basing our opinion on an experience of about twelve years, we recommend the concrete standpipe properly built on a firm foundation as better and cheaper than any other."

PREVENTING LEAKS.

Concerning the leaks and leakage, all of the standpipes referred to seemed to be subject to seepage at least, and some of them to more or less serious leakage. In many of them the efflorescence was considerable, and in several of the photographs of tanks this appears quite prominently and gives the false impression of leakage. In most of the tanks seepage and leakage occur almost exclusively in the horizontal joints between the work of successive days, and only occasionally vertical. For this reason several of those speaking on the subject suggested it as very probable that seepage could be almost entirely eliminated by pouring the tank continuously day and night. Simpson Brothers have tried increasing the richness of the mixture of concrete used, plastering the standpipe on the inside, lining it with asphalt and felt, and putting a lead lining over leaking joints. The first standpipe built by

them was mixed 1:2:4, and the concrete itself was found to be not entirely waterproof. The mixture was changed to 1:1½:3 in the next standpipe, with the result that there was very little leakage. Later they changed the mixture which they used to 1:1:2 and find this to be impervious to water and as good as any waterproofing compound which could be put into the concrete; with the additional advantage that it increases the strength of the concrete against cracking.

In Lisbon, Maine, the standpipe was made of 2:1½:3 concrete, to which was added hydrated lime amounting to 5 per cent by weight of the cement used, and the inside was plastered with a half-inch of cement mortar mixed 1:1, to which was added 2 per cent of Medusa compound; in addition to which the plaster to a height of 30 feet was painted with a waterproof compound. This tank shows seepage at the horizontal joints, although this is diminishing. The standpipe at Topsham, Maine, was built of a 1:2:3½ mixture, containing 5 per cent of hydrated lime. Here also the concrete appeared to be waterproof except for seepage through the horizontal joints. In a standpipe built at Key West, Fla., for the U. S. Navy, "a proprietary waterproofing compound was mixed with the concrete under a guarantee that it would secure the desired degree of watertightness. The general opinion seems to be that the use of this material had absolutely no beneficial effect." Probably the best report made was that concerning the Milford, Ohio, standpipe, which was erected in 1903. After using it about two years, some seepage was noticed at the horizontal joints, but the inside was coated with cement wash and since then there has been no seepage.

As to plastering the inside of the tank, Simpson Brothers took this precaution in the original construction of

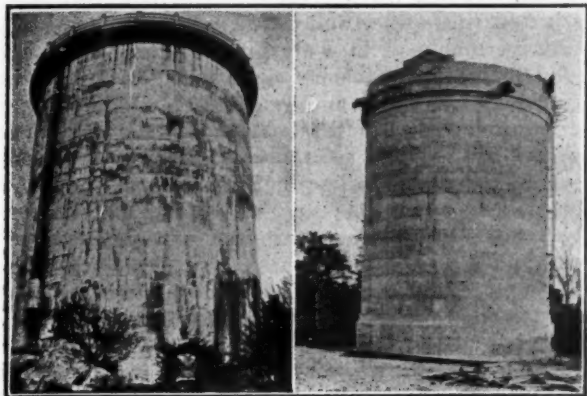
DATA ON REINFORCED CONCRETE STANDPIPES.

| Location. | Inside Diam. in Feet. | Height of Tank in Ft. & Ins. (Shell). | Depth of Water in Ft. & Ins. | Capacity in Gallons. | Date Constructed. | Total Cost. | Engineer. |
|---------------------------------------|-----------------------|---------------------------------------|------------------------------|----------------------|-------------------|----------------------|---------------------------------|
| Little Falls, N. J. ¹ | 10 | 43 | 43 | 25,260 | 1899 | ..... | J. Waldo Smith |
| Milford, Ohio..... | 14 | 81 | 78 | 93,000 | 1903 | ..... | ..... |
| Fort Revere, Hull, Mass. ² | 20 | 50 | 49± | 118,000 | 1903 | \$4,000 ³ | Quartermaster's Dept., U. S. A. |
| Attleboro, Mass..... | 50 | 102 | 100 | 1,500,000 | 1904 | 35,000 | F. A. Barbour |
| Waltham, Mass..... | 100 | 37 | 35± | 2,000,000 | 1906 | 26,000 | B. Brewer, J. R. Worcester |
| Bondsville, Mass..... | 70 | 20 | 20 | 576,000 | 1908 | ..... | ..... |
| Empalme, Senora, Mex..... | 30 | 90 | 90 | 475,000 | 1908 | ..... | ..... |
| New Haven, Conn..... | 50 | 25 | .. | 375,000 | 1908 | ..... | Albert B. Hill |
| Lenoir, N. C..... | .. | .. | .. | 500,000 | 1908 | ..... | ..... |
| Bridgewater, Mass..... | 30 | 78 | 78 | 413,000 | 1909 | ..... | H. B. Andrews |
| Manchester, Mass..... | 50 | 72 | 70 | 1,060,000 | 1909 | 30,291 | R. C. Allen, H. B. Andrews |
| Lisbon Falls, Me..... | 50 | 62 | 60 | 910,600 | 1909 | 19,288 | S. Litchfield, H. B. Andrews |
| Westerly, R. I..... | 40 | 70 | 70 | 650,000 | 1910 | 18,722 | S. M. Gray |
| Rockland, Mass..... | 46 | 104 | 102 | 1,300,000 | 1910 | 36,300 | W. Martin, H. B. Andrews |
| Cherry Valley, Mass..... | 40 | 21-4 | 20-9 | 195,000 | 1910 | 4,976 ⁴ | W. S. Johnson, H. B. Andrews |
| Rochdale, Mass..... | 40 | 21-4 | 20-9 | 195,000 | 1910 | 4,976 ⁴ | W. S. Johnson |
| Kensington, Conn..... | 50 | 21 | 20-5± | 300,000 | 1910 | 5,100 ⁵ | Hall & Bacon |
| Key West, Fla..... | 78 | 40 | .. | 1,500,000 | 1911 | 24,950 ⁶ | DeW. C. Webb, U. S. N. |
| Laconia, N. H..... | 28 | 46-1 | 43-6 | 200,000 | 1911 | 6,575 ⁷ | F. A. Barbour |
| Brockton, Mass..... | 160 each | 26-6 | 25 | 3,760,000 each | 1911 | 82,200 ⁸ | C. R. Felton, H. B. Andrews |
| Western, Mass. ⁹ | 50 | 38 | 36 | 441,000 | 1911 | 6,706 ⁴ | H. B. Andrews |
| Waverley, Ohio..... | 16 | 82 | 80 | 120,000 | 1911 | 4,500 | H. C. Babbitt |
| Ashland, Mass..... | 40 | 32-2 | 31-8 | 298,000 | 1911 | 5,810 ⁴ | W. S. Johnson |
| Northbridge, Mass..... | 25 | 28 | 27 | 90,000 | 1911 | 2,899 ⁴ | H. B. Andrews |
| Suffern, N. Y..... | 69 | 20-6 ¹⁰ | 19-9 | 559,000 | 1911 | 6,500 | Alex. Potter |
| Lexington, Mass..... | 30 | 104-6 | 104 | 550,000 | 1912 | 19,900 | F. W. Dean |
| Belton, Tex..... | 24 | 75 | 75 | 254,000 | 1912 | 6,000 | T. L. Fountain |
| Winchester, Mass..... | 29 | 43-6 | 40-6 | 200,000 | 1912 | 8,000 | J. R. Worcester |
| Penetanguishene, Ont., | 50 | 21 | 20-5± | 300,000 | 1912 | ..... | L. J. Mensch |
| Austin, Minn..... | 40 | 29-8 | 29 | 300,000 | 1912 | ..... | O. Clausen |
| Topsham, Me..... | 97 | 47-9 | 46-3 | 2,500,000 | 1913 | 38,000 | L. D. Thorpe |
| Fulton, N. Y..... | 40 | 100-4 | 100 | 940,000 | 1913 | 24,335 | William Muesser |
| San Francisco, Cal..... | 60 | 35-5± | 35-10 | 750,000 | 1913 | ..... | M. M. O'Shaughnessy |
| St. Louis, Mo..... | 153½ ¹¹ | 33 | 31 | 4,250,000 | 1913 | 51,850 | Ed. Flad & Co. |
| Chelmsford, Mass..... | 40 | 20 | 20 | 188,000 | 1913 | 5,180 ⁴ | H. B. Andrews |
| West Falmouth, Mass..... | 30 | 45 | 45 | 238,000 | 1913 | 9,800 ⁴ | H. B. Andrews |
| Woonsocket, R. I..... | 79 | 45 | 44 | 1,600,000 | 1913 | 23,514 ⁴ | H. B. Andrews |
| Sioux City, Ia..... | 142 | 33-1 | 32-1 | ..... | 1913 | ..... | Dabney H. Maury |
| Duxbury, Mass..... | 40 | 35 | 35 | 328,000 | 1914 | 7,115 ⁴ | W. S. Johnson |
| Webster, Mass. ¹² | 46 | 20 | 20 | 249,000 | 1914 | 5,260 | F. Fuller |
| Jamestown, R. I..... | 35 | 50 | 49 | 350,000 | 1914 | 10,010 ⁴ | H. B. Andrews |
| Halifax, N. S..... | 160 | 29 | .. | 3,250,000 | 1914 | 56,000 | W. W. Doane |

¹Inside filter house. ²Inside concrete, brick tower. ³Excluding tower. ⁴Contract price. ⁵Construction only. ⁶Including roof, \$5,000. ⁷Excluding foundation. ⁸Two tanks, cost of both. ⁹Partly below ground surface. ¹⁰Lower half is constructed below ground. Earth backing for retaining wall. ¹¹At top; 23 ft. below top diameter equals 151 ft. 6 ins. ¹²Protected by earth bank. The proportions of the concrete mixtures of the several standpipes were as follows: Waltham, Mass.—1:2:4. Manchester, Mass.—1:1.5:3. Lisbon Falls, Me.—2:1½:3. Rockland, Mass.—1:1:2. Cherry Valley, Mass.—1:1:2. Rochdale, Mass.—1:1:2. Laconia, N. H.—1:1:2. Western, Mass.—1:1:2. Ashland, Mass.—1:1:2. Northbridge, Mass.—1:1:2. Lexington, Mass.—1:1:2. Winchester, Mass.—1:1:2. Topsham, Me.—1:1:2. Chelmsford, Mass.—1:1:2. West Falmouth, Mass.—1:1:2. Woonsocket, R. I.—1:1:2. Jamestown, R. I.—1:1:2. (The above were all built by Simpson Bros. Corporation.) Key West, Fla.—1:2:4. These refer to the walls only; in several cases the bottom was made with a weaker mixture.

the Manchester standpipe, but several cracks developed on the south side. The Lisbon Falls standpipe they plastered and it did not show any leakage. The one at Rockland they did not plaster, and we understand that they have come to the conclusion that plastering is generally unnecessary.

Simpson Brothers endeavored to repair a crack by putting a lead lining over the leaking joint in Manchester, but the continued change in expansion, due to the filling and emptying of the tank and the changes in tempera-



MANCHESTER, MASS.

WINCHESTER, MASS.

ture, caused the joint to open again and the leak to reappear. The Topsham standpipe developed a considerable leak in one horizontal joint, and to remedy this the contractors cut a recess into the joint with sharp chisels and calked it with lead wool, which appears to have satisfactorily stopped the leaking.

Another method which has been tried is that of covering the inside with a lining of some sort. The Manchester standpipe, after the use of lead proved unsuccessful, was repaired by lining it with asphalt and felt where the seepage was worst, and this apparently was successful. In Lexington, canvas was pasted on the inside of the tank, using marine glue for that purpose; but although the glue was supposed not to dissolve in water, some months later most of the canvas was found to have fallen to the bottom of the standpipe. The Key West standpipe, when it was shown to develop cracks in the bottom, was emptied and the large cracks were covered with two layers of three-ply roofing, cemented together and to the concrete. Small leaks also appeared in the side walls near the base, and the lower part of the walls was painted with an elastic waterproofing paint. In spite of this, there was a leakage of about 200 gallons a day, part through the bottom (where the leaks were caused by settlement of the foundation), and part through horizontal cracks, and vertical ones which occurred at practically every channel and angle. After testing, the water was again lowered and spots showing most leakage were gone over with another coat of elastic waterproofing paint and additional protection given to the bottom leaks; as a result of which it was and still is substantially watertight.

As to the causes of leakage, one of these was believed by Simpson Brothers to have been too thin walls, and after the first one or two tanks the concrete was made thick enough to resist in itself all the tension, the increased strength of the mixture assisting in this. In constructing one of the earlier tanks, that at Waltham,

the officials expected a certain amount of seepage. For the first year or two there was very little, although a good deal of efflorescence and stalactite formation. After the second year the seepage began to increase considerably and continues about the same, a large part of the wall being wet from seepage, but so slight that most of it is evaporated before it can flow to the bottom. Mr. Allen stated that in Manchester most of the seepage and leakage has occurred on the south and west sides, where the effect of the heat of the sun seems to be greatest; also when the standpipe is emptied entirely and refilled, new points of seepage have developed, or at all events, have acted differently; and these emptyings and fillings appear to be cumulative in their effect. In the Lexington standpipe real damage occurred mostly between 10 and 20 feet above the bottom and is not confined to the south side, but appears also on the north, east and west sides. At four points corresponding roughly to the cardinal points, the concrete outside of the reinforcement appears to have been forced out by frost a maximum distance of perhaps six or eight inches and has the appearance of being nearly ready to spall off. On March 20 of the present year icicles extended from these cracks to the base of the standpipe. In addition to these larger spots, there were a considerable number of insignificant evidences of seepage, some of them as high as 40 feet above the ground.

In Manchester last year a piece about 8 feet square was forced off by frost at a point where a leak had developed about 15 feet above the ground, the concrete at this point having been disintegrated until it had the consistency of sand. There was, however, no disintegration inside of the reinforcement, but only in the outer shell. Charles L. Bowker stated that in the Topsham standpipe there does not appear to have been any damage to the wall from frost.

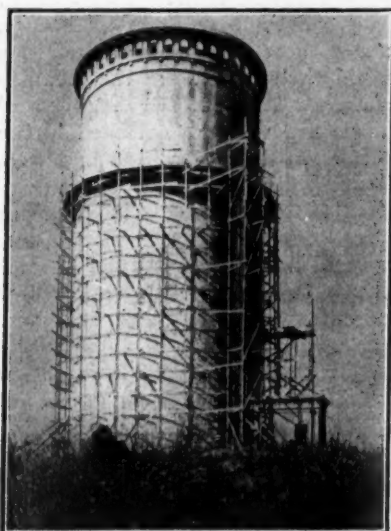
In his paper giving a description of the standpipe at Westerly, R. I., which was built in 1910, Thomas McKenzie stated that the mixture used for the walls was about 1:1½:3, measurement of voids in the sand and stone showing that this gave cement 10 per cent in excess of the voids in the sand and mortar 10 per cent in excess of the voids in the stone. Five per cent of hydrated lime by weight of the cement used was added for waterproofing. Water was admitted into the standpipe and carried up with the construction. When finally filled, two seeping spots were found and were successfully rendered watertight by forcing in cement grout under gas pressure



West Side North Side South Side
LEXINGTON, MASS., STANDPIPE, MARCH, 1915; SHOWING ICICLES.

from a carbon dioxide gas tank. There was one horizontal leak extending nearly one-third of the distance around the standpipe on the south and east sides. After about a month's use, the water was drawn off and an effort made to waterproof the inside with hot paraffine, the inner surface of the wall being heated with a charcoal fire in a

wire basket and then covered with hot paraffine applied with a wide, flat brush. The wall was then reheated, forcing the paraffine into the pores of the concrete, this process being repeated several times. It was not successful, however, for the leakage not only continued, but the crack increased in length. Moreover, more leaks began to develop at horizontal joints, all but one or two on the south and east sides of the tank. Another effort was then made to prevent leakage by applying a belt of plastic slate 2 feet 8 inches wide around the pipe, equally

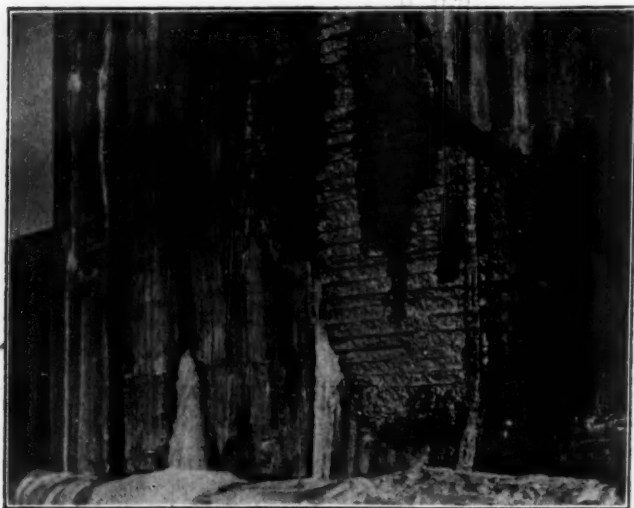


ERECTING BRICK COVERING
AROUND ATTLEBORO
STANDPIPE.

above and below the crack. A layer of plastic slate was put directly on the pipe, then one of paper, another of plastic slate and another of paper, and finally a layer of plastic slate containing enough slate dust to make it fairly hard and ready for the water. This also was not a success. While some of the leakage was stopped, the preparation gave such a bad taste to the water that it was necessary to discontinue the use of the standpipe.

In the fall of 1911 a special compound (probably some form of asphalt or pitch) was applied hot to the interior wall of the standpipe and then covered with water-dyke felt, five successive layers being built up in this way. The work was carried from the bottom of the standpipe to above the overflow line. This was entirely successful and no signs of any leakage have developed during the three years of continuous use of the standpipe since then. This waterproofing treatment cost 16½ cents per square foot.

The other paper was one by H. F. Conant, superintendent of the Attleboro Water Department, describing experiences with the Attleboro standpipe. This went



ATTLEBORO, MASS., STANDPIPE IN ITS SECOND WINTER.

into commission in 1905, and in the following winter several patches of the outer shell outside of the reinforcing were forced off by frost and some small leaks developed.

The inside was thoroughly cleaned and picked and four coats of plaster were put on, followed by a treatment by the Sylvester process. After applying four coats of this to the top and eight to a height of 35 feet (the Attleboro standpipe is 102 feet high), while the tank was not absolutely tight, the results were considered very satisfactory; but five more coats were placed over the entire tank and the tank rendered practically tight.

In spite of this, however, the concrete continued to scale off on the outside and leakage began and increased; and Mr. Conant, when made superintendent in 1912, investigated the matter and decided that the only way to insure permanency in waterproofing was by using an elastic membrane of some description. The tank was emptied and cleaned, and was then dried by removing the manhole cover in the bottom and the cover on the roof, which created a strong draft which dried the inside in about three days. The inner surface of the wall was then cleaned by use of wire brushes and the same waterproof treatment given as that already described as having been applied at Westerly.

For protecting the outside, which had scaled off to a very considerable extent, it was decided to build an 8-inch brick wall around the tank from the foundation up. This was carried last year to a height of 70 feet, with an air space left between the concrete and the brick to help maintain uniform temperature in the concrete. Winter stopped the work, but Mr. Conant stated that it was probable that the remaining height would be finished this year. Openings were left in the brick work near the bottom so that water could escape in case a leak should ever develop. Up to the time of preparing the paper the tank remained apparently perfectly tight.

MEMPHIS WATER WORKS IN 1914.

The water works of Memphis, Tenn., were described in our issue of June 2, 1909, by Wirt J. Wills, general superintendent of the Water Department, and brief abstracts of annual reports may be found in the issues of July 6, 1910, and July 3, 1913; while on June 14, 1911, we described a water waste survey which had been made in 1910 with the use of the pitometer. Pitometer surveys have been continued, and in 1914 a crew was put on in May and ten districts surveyed completely and preliminary surveys made in eleven others, leaving only one district in which no survey has been made.

During the year 15,142 house connections were inspected and 1,940 leaks discovered. Water was shut off at 204 places because leaks were not repaired; 46 stop boxes were relocated and 278 were cleaned out. During the extreme cold weather in December, inspectors were sent out nights and water was shut off at 29 places for wilful waste, to prevent the pipes from freezing. The report gives the minimum rate in gallons per 24 hours before and after inspection in each of the ten districts surveyed, and states that the reduction varied from 58 per cent to 21 per cent, the total reduction being 423,700 gallons per 24 hours.

At the end of the year there were 15,150 meters, 1,704 having been installed during the year; 1,269 meters were repaired in the shop, or about 8 per cent of the whole number. There are now twice as many connections with meters as without. Notwithstanding the large increase of water connections and number of consumers, pumping has increased but slightly, the daily average for 1914 having been 13,296,208 gallons and for 1913 12,948,461, and the average for the preceding ten years 13,007,480. This economy is attributed by the water commissioners to the use of meters and the pitometer survey.

During the summer of 1914, when other cities in the vicinity were suffering for water, the mayor of Memphis requested the citizens to use all the water they needed, as no curtailment of its use was necessary.

THE EFFECT OF FILTRATION AND STERILIZATION ON TYPHOID FEVER IN PHILADELPHIA.

By FRANCIS D. WEST,
Chemist in charge, Torresdale Laboratory.

The Municipal Journal, Vol. XXVIII No. 22, June 1, 1910, published an article by the writer on the "Benefits from Sand Filters in Philadelphia." This article was written for the purpose of correcting the erroneous impressions which had gone forth that slow sand filters had failed to reduce typhoid fever. It was shown that in 1909 the death rate from the disease had been reduced 21.2 per 100,000 per annum.

Since that article was written, Philadelphia has taken several steps in advance in her attempts to reduce typhoid fever. The present article brings the typhoid statistics to date.

Chart I shows the typhoid death rate per 100,000 per annum from 1888 to 1914, inclusive. It also shows when filtration was started, the per cent filtered and the per cent sterilized.

It will be seen that in 1914, the first year during which the entire supply was both sterilized and filtered, we had the exceptionally low rate of 7.5 or 124 deaths in the city. Of these 124 deaths, 17 were from cases brought in from outside and 16 were from cases reported by the physician as typhoid, whereas the diagnosis of the Bureau of Health disagreed. With these 33 deaths omitted, the rate would be but 5.6 per 100,000 per annum.

Table I gives the number of deaths and the rate for 1914 to May, 1915, inclusive.

Table I, Showing Deaths and Rate per 100,000 from Typhoid Fever, by Months, 1910 to May 1915, Inc.

| Month | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 |
|-----------|----------|----------|----------|----------|---------|-------|
| Jan. | 29 1.9 | 17 1.1 | 34 2.1 | 14 .9 | 10 .6 | 5 .3 |
| Feb. | 36 2.3 | 16 1.0 | 12 .7 | 6 .4 | 12 .7 | 4 .2 |
| March .. | 28 1.8 | 19 1.2 | 14 .9 | 8 .5 | 8 .5 | 5 .3 |
| April ... | 21 1.4 | 14 .9 | 14 .9 | 16 1.0 | 15 .9 | 13 .8 |
| May | 12 .8 | 9 .6 | 8 .5 | 24 1.5 | 14 .8 | 3 .2 |
| June ... | 13 .8 | 9 .6 | 5 .3 | 28 1.7 | 9 .5 | |
| July | 7 .5 | 14 .9 | 31 1.9 | 23 1.4 | 13 .8 | |
| Aug. | 16 1.0 | 32 2.0 | 23 1.4 | 43 2.6 | 14 .8 | |
| Sept. ... | 26 1.7 | 28 1.8 | 23 1.4 | 30 1.8 | 7 .4 | |
| Oct. | 35 2.3 | 21 1.3 | 15 .9 | 21 1.3 | 11 .7 | |
| Nov. | 22 1.4 | 15 1.0 | 10 .6 | 22 1.3 | 5 .3 | |
| Dec. | 24 1.5 | 29 1.8 | 11 .7 | 20 1.2 | 6 .4 | |
| Total .. | 269 17.4 | 223 14.1 | 200 12.5 | 255 15.6 | 124 7.5 | |

Population 1,549,008 1,577,000 1,600,000 1,634,000 1,658,000 1,690,000

1910 Bleach at Torresdale in December.

1911 Bleach at Torresdale January, February, March and December.

1912 Bleach at Torresdale all year; at Belmont after March 1; at Roxboroughs after Jan. 26. Queen Lane Plant in service, no bleach.

1913 Bleach at Torresdale all year; liquid chlorine since November; same at Belmont and Roxboroughs. Queen Lane started to use bleach Aug. 10, chlorine Oct. 26.

1914 Liquid chlorine all plants all year.

Table II, Showing Percent of Filtered Water in City Supply; also Percent of Water Sterilized.

| | Per Cent Filtered. | Per Cent of Rain Water Sterilized. | Per Cent of Filtered Water Sterilized. |
|------------|--------------------|------------------------------------|--|
| 1903 | 2.5 | .. | .. |
| 1904 | 10.0 | .. | .. |
| 1905 ... | 14.0 | .. | .. |
| 1906 | 14.0 | .. | .. |
| 1907 | 25 | .. | .. |
| 1908 | 48 | .. | .. |
| 1909 | 86 | 14 | 0 |
| 1910 | 86 | 14 | 5 |
| 1911 | 87 | 13 | 22 |
| 1912 | 100 | 0 | 72 |
| 1913 | 100 | 0 | 89 |
| 1914 | 100 | 0 | 100 |
| 1915 | 100 | 0 | 100 |

Table II shows the various steps taken to improve the quality of the water since 1903, when the first filter was started.

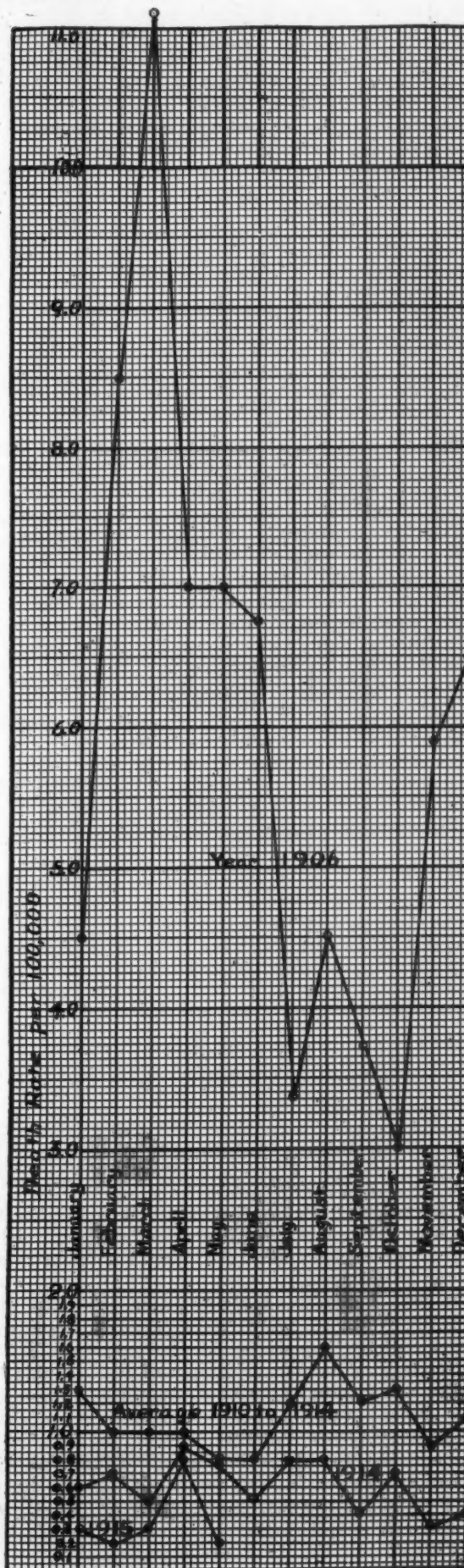


CHART NO. 2—DEATH RATES IN PHILADELPHIA PER 100,000 PER MONTH.
Showing Seasonal Variation before and after Filtration and Sterilization.

The effect of sterilization on filtered water at Torresdale is shown by Table III, giving the per cent of positive tests for *B. Coli Communis* in the Torresdale filtered water basin.

Table III.—Per Cent of Positive Tests for *B. Coli* in Torresdale Filtered Water Basin.

| Year. | Treatment. | <i>B. Coli Communis</i> , Per Cent Positive | |
|--------|--|--|---------|
| | | 1 C.C. | 10 C.C. |
| 1910.. | In December—with bleach..... | 12.7 | 38.8 |
| 1911.. | January, April and December—treated with bleach..... | 4.0 | 13.3 |
| 1911.. | May-November, inc.—untreated..... | 14.5 | 58.0 |
| 1912.. | Treated with bleach..... | 4.1 | 22.0 |
| 1913.. | ditto (greater strength used)..... | 1.4 | 8.5 |
| 1914.. | Treated with liquid chlorine..... | .5 | 8.0 |
| 1914.. | Same water before sterilizing..... | 23.0 | 61.0 |

These results at Torresdale demonstrate conclusively the benefits of sterilization, which is further proven by the reduction in typhoid.

That typhoid fever in Philadelphia was due to water is shown by chart II, in which 1906 is compared with the average of 1910 to 1914, inclusive, and with 1914 and 1915 to May. In 1906 the greatest number of deaths occurred in the spring following the freshets, when the water was especially bad. The summer drop is due to the fact that the water at that time was in better condition, although the point for August—4.5—is greatly in excess of the average of 1910-1914 of 1.6.

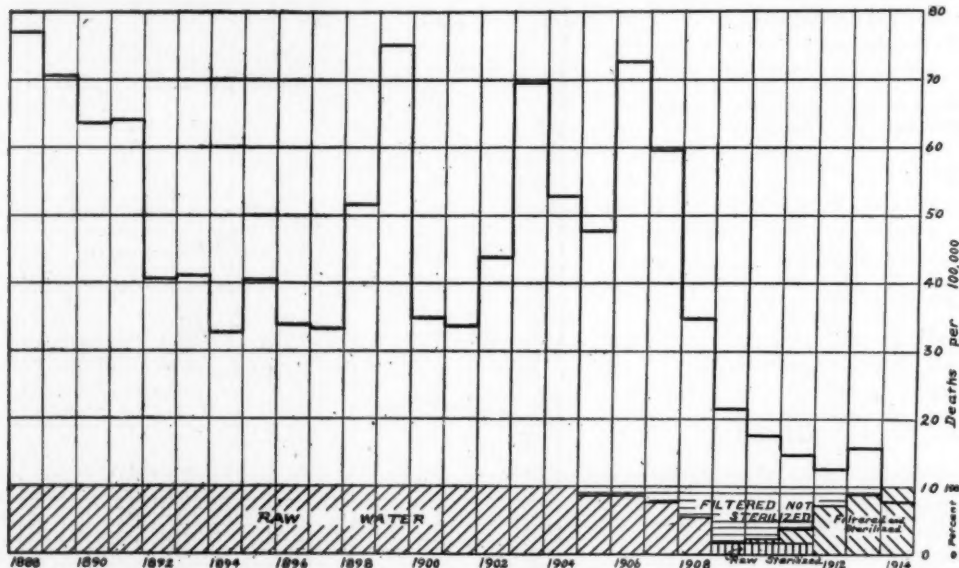


CHART NO. 1. TYPHOID DEATHS IN PHILADELPHIA, RATES PER 100,000, BY YEARS.
Population: 1870—674,022. 1880—847,170. 1890—1,046,964. 1900—1,293,697. 1910—1,549,008.

The summer rise has been explained by the so-called vacation typhoid, although peculiarly enough in 1914 the highest point was in April—September had a rate of but .4 per 100,000.

It would appear that the water has been more efficiently sterilized by the substitution of liquid chlorine for bleach. (See Municipal Journal May 28, 1914, on "Disinfecting the Water Supply of Philadelphia.")

B. Coli Communis has been practically eliminated from our filtered water. The wonderful record of 1914 may be surpassed by that of 1915. During the first five months we had but 30 deaths in the city from typhoid fever, a rate of 4.3 per annum, compared with 59 deaths or a rate of 8.6 for the corresponding time in 1914.

The city is still further improving its supply by building a sedimentation basin at Torresdale. This will greatly relieve the burden on the filters and consequently on the sterilization plant.

One is inclined to ask: "Is there really a so-called 'Prosoemic' typhoid rate, and if there is, what is it for Philadelphia?"

SEWAGE DISPOSAL PLANT FOR AKRON

Appliances and Methods Used in Constructing Disposal Plant—Garbage Reduction Plant, Capacity Twenty-five Tons in Eight Hours.

(Continued from page 74.)

In the excavations considerable ground water is being encountered, and the mixture of this with the very finely divided clay gives a material which is much like quicksand in some respects and is quite difficult to handle. The total amount of water, however, is not very great, the principal difficulty being keeping pumps open and preventing foot valves and even suction pipes from being clogged with clay carried by the water. For de-watering the excavations and for the heavier pumping a Morris Machine Works 6-inch centrifugal pump is used. For keeping the water down while work is in progress Pulsometers are employed. All steam used is furnished by boilers constructed by the Nagle Boiler & Engine Works of Erie, Pa. Electricity is to be used for operating the plant, and it is expected that within a very short time the cables bringing this to the plant will be in place, after which electricity will be used for running several of the pumps, the concrete mixer, etc. The contractor is hoping to greatly simplify the water difficulty in the deep primary tank excavations by draining the

ground, for which purpose he is constructing a drain leading from the area in which the tanks are being constructed out to the river, which drain is approximately 20 feet deep. This drain will involve some expense, but the draining off of the water will greatly simplify the excavation for the construction of the primary tanks. The excavations are all being lined with close sheet piling well braced, which piling is driven partly by hand and partly by a steam hammer pile driver furnished by the McKiernan-Terry Drill Company. The exact location of rangers and braces is carefully determined beforehand so as to facilitate the placing of forms for the construction of the tank walls.

In order to protect the works from high water, an embankment is being built along each end and the river side of the plant, the material excavated from basins, sprinkling filters etc., being used for this purpose. For both excavating and for depositing concrete a cableway is being used. Two towers, each 55 feet high from the deck to the cable and resting upon tracks laid parallel to the longest dimension of the plant, carry a cable and on one of them is the hoisting plant. At the present time the span of the cable is 261 feet, but later it is expected to lengthen this to 500 feet. By this cableway the excavated material is raised in buckets from the primary tank excavation, run along the cable to a roadway and dumped into Watson wagons, by which it is transported to the embankment surrounding the plant, or to other points where fill may be desired. The towers can be moved along the tracks but this is done only at intervals of several days or weeks, as the work progresses, no effort being made to run the cable back and forward in the handling of material.

On the railroad trestle, which is but a short distance

from the primary tanks, are located three bins, one for gravel and one for cement, both of which are brought by rail across the trestle, and one for sand, which is brought by teams from a sand deposit nearby and dumped into the bin. Each bin has at its bottom a shear gate, through which it discharges into a measuring hopper. This hopper will be filled from the bin with gravel to a line marked on the side, after which the sand will be discharged to fill the remaining space up to the top. Immediately under this hopper will be set a T. L. Smith mixer (which has been used for the comparatively small amount of concrete work which was done on the tanks last Fall), into which the hopper will discharge the sand and gravel, and also the cement from the cement bin. The mixer will discharge the concrete into buckets on cars, which will then be hauled by a Baldwin dinky engine to a point under the cableway, by which the concrete bucket will be raised and transported and lowered where needed.

The sewage disposal plant is being constructed by E. McShaffry & Sons, W. Harn being superintendent in charge of the construction. The work was designed by R. Winthrop Pratt, consulting engineer of Cleveland, who is in general charge of construction. The supervising engineer representing Mr. Pratt on the work is G. W. Knight. R. E. Garvin is resident engineer of this work.

GARBAGE REDUCTION PLANT.

In general the garbage reduction plant is like the Columbus plant (see Municipal Journal for November 15, 1911, and November 6, 1913), except for some minor changes; the only important difference being that the Akron plant is to press the garbage in the digestors by steam pressure instead of putting it through rolls for that purpose.

The basis of design for the garbage reduction plant was 25 tons a day which, in view of experience in other places, was considered about right for a population of 100,000 people. The plant, however, was designed for a capacity of 75 tons in 24 hours or 25 tons in 8 hours, it being the intention of the designers that, with increased quantities of garbage, the plant would be operated for long periods each day and that no additional construction would be necessary for many years.

After the construction of the garbage reduction plant was commenced, the question of taking care of refuse was agitated, and with a view of estimating the cost of refuse collection and incineration in connection with the garbage reduction plant, a house to house canvass was made and estimates of quantity and quality of refuse secured. At the same time data on the amount of garbage were obtained with the idea that this would assist in planning for the garbage collection system.

Associated with R. W. Pratt in the preparation of the plans for the garbage reduction plant was W. J. Springborn, who for several years was in charge, as director of public service, of the Cleveland garbage reduction plant, and who is at present general manager of the New Bedford (Mass.) Reduction Company, which is reducing the garbage of New Bedford by an improved and novel reduction system.

The buildings for the garbage reduction plant are being built by J. C. Devine Construction Company, of which R. Eckhart is superintendent. The equipment is being furnished by the Kilby Manufacturing Company.

The specifications call for five digesters 66 inches in diameter by 14 feet high; a blowoff tank 4½ feet in diameter by 16 feet long; a settling tank 5 feet wide by 20 feet long, with hopper bottom and divided into five compartments; another settling tank 5 feet in diameter by 6 feet high with a dished bottom and containing a steam coil for heating the grease; two grease storage

tanks 7 feet in diameter and 12 feet high supplied with steam coil for keeping the grease warm; a double effect evaporator capable of evaporating not less than 800 gallons of water per hour and furnished with condenser and pump for pumping the stick-water to the storage tank, and a drip pump for removing the condensation from the steam chest; an evaporator supply tank 7 feet wide by 20 feet long; a storage tank with sufficient capacity to store all of the stick-water from two days' operation of the evaporators; a percolator of the revolving type at least 6 feet in diameter by 18 feet long; two treating tanks not less than 5 feet in diameter and 16 feet long, each to have steam coils for heating and treating the material; a naphtha heater of not less than 300 horse-power for heating the naphtha when being pumped to the percolator, this being of the closed type with cast iron shell and brass or copper tubes; a brass fitted pump for pumping naphtha into the percolator; a grease pump with 3-inch suction and 2-inch discharge for pumping grease from the percolator to the treating tanks; a naphtha condenser 24 feet long, 7½ feet wide and 7 feet high, made of copper tubing for the reclamation of naphtha from the percolator or treating tank; two naphtha storage tanks 6 feet in diameter by 20 feet long; a run-down or receiving tank 26 feet long by 24 inches diameter; a screen or hexagon reel not less than 30 inches diameter by 8 feet long, furnished with a discharge spout for discharging tailings upon a belt and conveying them over a magnetic separator; a magnetic separator with a pulley not less than 16 inches across its face, the head pulley to be an electric magnet suitable for separating the magnetic from the non-magnetic material, so arranged as to deliver the tailing to a grinder; a grinder for grinding this tankage; a blower for receiving material from the screen and delivering it to a cyclone dust collector, so placed that the material may be spouted into the warehouse or directly into a railroad car; a dryer 60 inches in diameter by 40 feet long; a scrubber or condenser for condensing the vapors arising from drying the garbage; a disintegrator 30 inches in diameter and 20 feet long, and a condenser for condensing the gases arising from the venting of the digesters during the process of cooking the garbage.

The garbage is conveyed from one part of the plant to another by six conveyors of the scraper and drag chain type. The first of these takes the garbage from the receiving pit and delivers it into the cross-conveyor extending to the digester building. The second conveyor receives the garbage from the first conveyor and delivers it through spouts into the digesters, there being suitable gates and spouts leading from this to each of the digesters. The third conveyor takes the material from the digesters and delivers it into the grinder or disintegrator located on the mezzanine floor. The fourth conveyor takes the tankage from the discharge end of the dryer and delivers it onto the floor of the small storage room adjoining. The fifth conveyor takes the material from the small storage room into the upper story of the percolator building and discharges it through spouts into the percolator. The sixth conveyor takes the material discharged from the percolator and delivers it into the screen. All of this machinery is to be driven by electric power, the motors being designed to operate with alternating current, 60 cycle, 3-phase 220 volts.

The garbage upon reaching the plant is dumped into a receiving pit where it is sorted out and all materials removed which it is not desired to send through the plant with the garbage. After these are removed, the garbage is received by conveyor No. 1, from which point it is carried through by conveyors as just described.

Upon the completion of the work the contractor must run a two weeks' test of all the machinery and appliances, demonstrating the capacity of the plant to treat 25 tons

of raw garbage in eight hours; the garbage for this test to be removed from the city wagons or cars (it is proposed to bring a large part, if not all, of the garbage by rail across the trestle, these cars to be loaded at a loading station near the center of the city) as soon as it is delivered to the works and immediately put into the digesters so that it may be cooked during the night following its delivery. The city is to furnish all fuel, labor and supplies for making this test run and to have as its property all by-products obtained thereby; but the contractor will have full charge of the machinery and the operation of the plant during that time.

JAMESTOWN MUNICIPAL ICE PLANT.

The Jamestown, N. Y., Hospital Board last year installed for the use of the city hospital a municipal ice plant, by which it has been demonstrated that ice can be supplied at \$1 per ton, about one-half the price previously charged by a private company.

PENDANT ARC LAMPS IN CHARLESTON.

One of the first installations of the new type of pendant luminous arc lamps was made recently at Charleston, W. Va. The lamps were manufactured by the General Electric Company and are equipped with prismatic glass refractors. The system of lighting in this city may be divided into three classes: "White Way," or ornamental lighting, in the business section; intermediate lighting in the residential section, and suburban lighting.

In the "White Way" section are installed sixty-two 4-amp. ornamental luminous arc lamps, using high efficiency electrodes and equipped with fine texture Alba globes. The lamps are mounted on ornamental brackets manufactured by the Electric Railway Equipment Company. The brackets are supported on steel trolley poles with overhead line construction. The poles are spaced approximately 120 ft. apart on each side of the street and

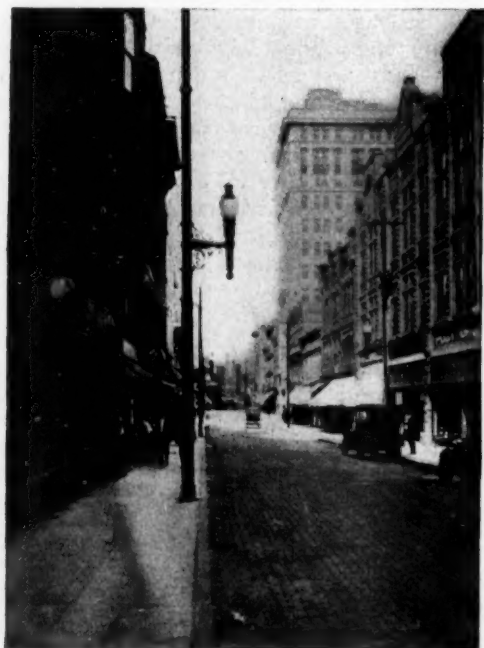


PENDANT LUMINOUS ARC LAMPS, MAST-ARM SUSPENSION, RESIDENTIAL SECTION.

considerable light is projected upward, which illuminates the front of the buildings from the pavement to the cornice. This soft and well diffused distribution of bright light is particularly effective and practical for business sections.

In the residential sections and throughout the greater part of the city pendant luminous arc lamps with refractors and operating at 4 amp. are employed. These are hung from 22 to 25 feet above the street, at street intersections, which spaces the lamps from 300 to 400 feet apart. The refractor type of lamp, on account of its extensive distribution of light, is especially adapted to such spacing, and a very even illumination is produced on the street surface. Both the center span and mast arm suspension are used, in conformity with the physical requirements of different localities.

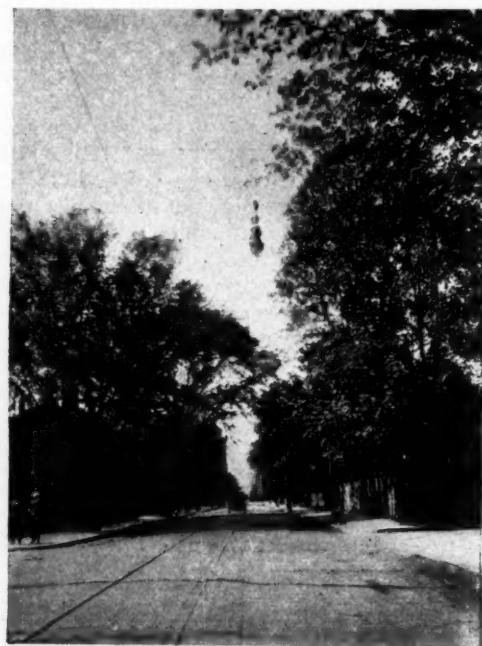
In the outlying portions of the city and in suburban sections where the use of large units is not warranted,



ORNAMENTAL LUMINOUS ARCS IN BUSINESS SECTION.



DIRECT CURRENT SERIES LUMINOUS ARC LAMPS, WITH REFRACTOR.



PENDANT LUMINOUS ARCS, CENTER SPAN SUSPENSION, RESIDENTIAL SECTION.

are staggered. The elevation of the lamps is 16½ feet from the curb to the arc.

With this spacing, a well diffused and brilliant daylight effect is produced, with an entire absence of shadows, and on account of the peculiar shape of the globe

low wattage series incandescent lamps are employed, mounted on brackets and equipped with radial wave reflectors. The entire system is operated from General Electric Company fifty-light, double tube, series rectifier sets.

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CHANGE OF ADDRESS

Subscribers are requested to notify us of changes of address, giving both old and new addresses.

Contributions suitable for this paper either in the form of special articles or of letters discussing municipal matters, are invited and paid for. Subscribers desiring information concerning municipal matters are requested to call upon MUNICIPAL JOURNAL, which has unusual facilities for furnishing the same, and will do so gladly and without cost.

JULY 22, 1915.

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Use of Concrete for Standpipes.

In this age of concrete, when trials are made of constructing almost everything of that material from ten-story buildings to water buckets, it is but natural that some attempts should be made at using it as a substitute for steel in building waterworks standpipes. It may be surprising to many, however, to learn that nearly fifty concrete standpipes have been built. So far as we have learned, none of these have collapsed or been withdrawn from service; and although more than half of them have been built within the last five years, and thus have not had a very long test, yet the fact that they have experienced several seasons of summer heat and the freezing winters of New England (where the majority of them are located) without a failure, speaks well for their durability. Because of the general opinion that concrete increases in strength with age, it might seem that a standpipe which has been in service for a year or two is good for all time. But several superintendents and engineers have called attention to the fact that in several cases new cracks have appeared each time the standpipe has been emptied and refilled; also that spalling or shelling off of the outside of the tank has in-

creased with age. While none of these effects appears to have been of a nature to cause immediate alarm, they at least should be thoroughly studied.

The great advantage claimed for concrete standpipes, as compared with steel, are, in general, two—a more attractive (or less unattractive) appearance, and the avoidance of the expense of painting every two or three years to prevent deterioration and final destruction. The possibilities of concrete from an architectural point of view are undoubted; but it appears to us that this advantage is to a considerable extent nullified by the efflorescence, seepage and scaling off of the surface, one or all of which are found to a greater or less extent in every concrete standpipe, we believe.

The most experienced builders of such standpipes state that they will not guarantee tightness unless a waterproof lining be placed in the tank, an asphalt and felt combination being the one which has apparently given the best results. How durable this is cannot yet be told; but it seems probable that with the rise and fall of water alternately wetting and exposing the lining, and especially when ice is floating on the water so fluctuating, this lining will in time need repairs, although these probably will not be so expensive as the repainting of steel standpipes.

But perhaps the most serious objection is the danger of unskillful workmanship in constructing the concrete. So far one firm has built nearly half of all the concrete standpipes, and the very novelty of them has undoubtedly caused unusual care to be taken by all concerned in their construction. If they should become common, however, and the methods standardized, there is danger that, as in other concrete work, inexperienced or careless workmen will turn out an occasional poorly mixed batch of concrete or neglect some essential precaution, and we will have some serious failures of such tanks. The principal drawback to the use of concrete is the very fact that anyone can make it—after some fashion—and the resulting danger that poor work will be more or less common.

Patrol System of Maintaining Roads.

A few years ago it was commonly stated by state highway officials and experts that, while the patrol system of maintaining highways had proved successful in Europe, it would not be so in this country, giving as their reasons that labor costs two to four times as much in this country as was paid in Europe to the men employed on such work, and it would, therefore, be prohibitively expensive. Also, that the general use of bitumens in road-construction introduced new conditions which made patrol maintenance by single scattered individuals impracticable.

But during the past two or three years several states have inaugurated this system and its use seems to be increasing. On July 15th Pennsylvania state highway commissioner Cunningham announced that on August 1st that system would be established on Pennsylvania state highways. At the start 190 men will be used in 46 counties, receiving 15 to 20 cents an hour, which averages about \$65 a mile a year. It is the intention that ultimately no man shall have more than 6 miles of roadway to patrol.

The working out of this system on such an extensive scale and the results obtained and the cost will be watched with interest by officials of highway departments of other states.

The WEEK'S NEWS

North Carolina State Highway Exhibit—Litigation Over Philadelphia's Parkway—Baltimore's Passing Cobblestones—Litigation Over Passaic Valley and Bronx Valley Sewers—Profitable Water Plants at Niles, O., and Hartford City, Ind.—To Instruct South Carolina Fire Officials—The City Managers of Thomasville, N. C., and San Diego, Cal.—Nashville—Municipal Rapid Transit Problems in Detroit, San Francisco and Philadelphia—The Rhode Island Car Strike—Jitney News—State Engineering System of New Jersey—Passaic's Slank Case—Newark Reclaimed from the Swamp.

ROADS AND PAVEMENTS

To Have a State Highway Exhibit.

Raleigh, N. C.—State Geologist Joseph Hyde Pratt of the Geological Survey and State Highway Commission is making arrangements with Secretary J. E. Pogue of the North Carolina State Fair for a big joint federal government and state exhibit, devoted especially to highway construction. There will be miniature models of various approved methods of highway construction in connection with numerous other features of the joint exhibit. Also, there will be in progress during certain hours of each day actual construction work in model road-building on the fair grounds.

Sunset Highway Opened.

Seattle, Wash.—Sunset highway has been dedicated by Governor Lister, many other officials and three hundred good roads enthusiasts from either side of the mountain range. The road is a fine thoroughfare from Seattle to Ellensburg. It rises from the sea to 3,100 feet above sea-level in fifty-two miles. At no place is the grade greater than 5 per cent, and then only in the last six miles. It passes through the forests for miles, goes along the slopes of the Cascades at the side of the roaring Snoqualmie river. At Snoqualmie the road is within a few hundred feet of the splendid Snoqualmie falls.

Philadelphia's Parkway Litigation.

Philadelphia, Pa.—In consequence of the ruling made by the state supreme court the city faced the proposition of paying without delay for approximately \$7,000,000 worth of real estate for the Parkway or paying 6 per cent per annum on this amount until paid. All the property to be paid for is within the lines of the Parkway, according to the plans of the city. In many cases the property has been in this position for more than ten years, during all of which time nothing could be done with it by the owner to make it a better revenue-producer, unless he wished to improve his property, knowing that the cost of improvement would not be included in the damages he would eventually receive. The ruling of the state supreme court is that the owners of the property can at once have court appoint a board of viewers to assess damages and that the damages are collectable at once. In the absence of any money to pay such damages the property owners can mandamus the city and receive 6 per cent on the money due them until it is paid. The aggregate assessed value of this property is \$5,238,250. With its present tax rate, it is said, the city is not financially in a position to meet the more than \$6,000,000 of probable damages for the property. It was pointed out that a loan might for the time being overcome the necessity of increasing the tax rate, but that this would involve heavy fixed charges and reduce the city's power to create other public improvements. At the present time there is approximately \$700,000 to pay for property on the Parkway. Already \$3,529,048.86 has been spent on the Parkway. Of this sum, \$3,252,671.87 has been spent in the acquirement of properties. All these purchases were made since 1906. The remainder of the money has been put into the construction work on the improvement. Advancing a series of reasons why the court should hear re-arguments upon the case brought to determine the city's responsibility in plotting the parkway, City Solicitor Michael J. Ryan filed with the Superior Court of Pennsylvania a formal petition for a rehearing in the matter. Mr. Ryan, in his petition, sets forth that subsequent to the date of one of the arguments regarding the assessing of damages, the legislature, at its

last session, passed an act regulating the plotting of such improvements in first class cities. The act provides that hereafter the plotting of parks or parkways shall constitute an appropriation of the land in five years, that where the plotting shall have already been done, it shall constitute such appropriation at the expiration of three years from the date of the act.

Cobblestones in Baltimore 100 Miles Less.

Baltimore, Md.—The paving commission announces that there are now 100 miles less cobblestones in the city than four years ago. The commission began its work in the summer of 1911. Nearly all of the \$5,000,000 paving loan will be expended this year, but the special paving tax created by the same act that authorized the paving commission will tide the work over for some time to come. Since the paving operations began this season Chairman R. Keith Compton reports to Mayor Preston and the commission that fourteen miles of improved streets have been completed, which exceeds the mileage to the corresponding date last year.

SEWERAGE AND SANITATION

Typhoid Fever Campaign.

Phoenix, Ariz.—The city health department has inaugurated a campaign against further epidemics of typhoid from sources which the department can control. Under the authority of city manager Robert A. Craig a most comprehensive sanitary inspection of dairies is now being made, inspection of all premises upon which privies exist, has been carried out and these privies ordered abated. A campaign of education is to be carried on to instruct the public in the relation of personal hygiene to the prevention of typhoid fever. City health officer Edward S. Godfrey, Jr., has made recommendations to the city manager. Incidental to the campaign the services of Dr. W. O. Sweek, pathologist for the Chicago Mercy Hospital clinics, is acting as consulting bacteriologist. The vital statistics for the years 1910 to 1913, inclusive, show that the Phoenix death rates from typhoid fever were for the years named 74.3, 70.0, 39.8 and 38.0 per hundred thousand population respectively. Although the rate for 1914 of 23.6 per hundred thousand is the lowest of any year for which there is any data and shows a very appreciable decline from the previous year, yet this is felt to be too high, and the present campaign is for further reduction.

Contractors Sue in Passaic Valley Sewer Work.

Newark, N. J.—Suit for \$103,012.75 damages against the Passaic Valley Sewerage Commission has been started in the Newark branch of the United States District Court by the Donlon Contracting Company of New York city, the company alleging that extra work on a section of the trunk sewer involved the expenditure of that amount. According to the complaint, the company made an agreement with the commission on July 3, 1912, for the construction of section 15 of the Passaic Valley trunk sewer. Section 15 of the trunk sewer runs through Hope Avenue, Passaic, and Acquackanonk township, a distance of 7,270 feet. The specifications by the engineers included the building of the section in a horseshoe fashion through a tunnel. The commissioner's engineers represented the work could be done without using compressed air and a shaft, states the complaint, and a shaft was sunk with timber shoring. After starting the work the contractors found it impossible and impracticable to do the work according to speci-

cations. Then it was agreed to modify the plan of constructing the sewer so as to make it in circular formations instead of the horseshoe plan. Metallic plates were substituted for the timber shoring and compressed air was used in putting through the tunnel. The Donlon Contracting Company alleges these changes in the plans greatly increased the cost of construction. It is estimated by the concern that the modified plans entitled them to \$100,000, representing the increased cost with "a reasonable profit." The extra \$3,012.75 is the company's estimate of the additional expenses incurred in protecting private property and other incidental expenses. Papers in the suit have been served on Joseph H. Quigg, secretary to the Passaic Valley Sewerage Commission. The secretary stated that the original contract with the Donlon Contracting Company was for \$278,170. Payments made by the commission to the contractors to date aggregate \$286,092.25.

The Bronx Valley Sewer Case.

White Plains, N. Y.—It is stated that the decision of Judge Rogers of the United States Circuit Court of Appeals in the case of the American Pipe and Construction Company, against the county of Westchester, has been misinterpreted. The original view of the decision was that it declared the construction of the Bronx Valley sewer to be a charge on the whole county. Former County Attorney Charles A. Van Auken, of New Rochelle, explains the decision as merely technical. He says that while the United States Circuit Court of Appeals has found that the pipe company claim is properly brought against the county of Westchester, it does not mean that, in the event of the company getting a judgment for extras, the county cannot collect that sum from the property in the sewer district. Attorney Van Auken says the decision covers only the technical point as to who are the proper defendants. The Bronx Valley Sewer Commission has ceased to exist, and, since it was only the agent of the county, the court holds that the suit is properly brought against the county. This does not, however, mean that the cost of the sewer is a charge on the whole county, as has been stated. In making the decision, Judge Rogers, with Judges Lacombe and Cox concurring, reversed the decision of the lower court, which had held that the county could not be made defendant. The American Pipe and Construction Company are the assignees of the Mack Paving and Construction Company, the concern that built the sewer. The pipe company seeks to recover \$891,952 for extra work done on the sewer. This claim is being pressed in another action, entirely independent of the one covered by Judge Rogers' decision.

WATER SUPPLY

Jewell Filter Patent Suit.

Philadelphia, Pa.—Started in October, 1910, by Ira Jewell, of Chicago, Ill., to restrain the city, and the Keystone Construction Company, and Senator James P. McNichol, its treasurer, from infringing on his patented water filter, and for an accounting of profits and damages accruing from the infringement an equity suit was dismissed by Judge Thompson in the United States District Court. The dismissal of the suit, however, is without prejudice to Jewell's right to begin another action against the defendants. The controversy arose over the installation in the city's filtration plant at Torresdale of water filters which Jewell alleged were infringements of his invention.

Water and Light Plant Profitable.

Niles, O.—For the first time in the history of the city of Niles, the water and light department has returned a profit for the past year. The exact amount cannot be stated at this time, but it amounts to several thousand dollars. The increased earnings have been due largely to the efforts of the city authorities in effecting a new contract with the Trumbull Public Service Corporation of Warren, as a result of which the rate to the city for electric current was reduced materially. There has also been an increase in the number of consumers and municipal ownership and municipal control of electric light and power have been placed on a substantial basis. As a result of the profits of the light

and water department the city authorities were able to transfer \$5,000 from the light and water fund to the current sinking fund to pay off bonds of the light and water department. Accordingly the levy for next year on account of the sinking fund was reduced by that amount. In consequence the regular funds for city departments in the budget, instead of its being necessary to reduce them in order to bring the total within the limit, actually were increased. The library, service and health departments among others benefited by the transfer of funds. It is anticipated that the total profits of the light and water department for the year will be approximately ten thousand dollars. Money from the department, in addition to that transferred to pay off bonds, is being used to repair the filtration plant, which work is proceeding under the direction of Supt. Holloway.

Waterworks Operating at Profit.

Hartford City, Ind.—The waterworks system of this city, which has been thought to be operating at a loss to the city, has been proved a paying business, according to the report of City Clerk Edwin McEldowney. The report covers ten months up to April 30, 1915:

| Debits. | |
|---|--------------|
| Steam power pumping..... | \$1,637.50 |
| Steam gen. appt. account..... | 3,368.24 |
| Distribution | 1,276.53 |
| Commercial expense | 133.28 |
| General expense | 266.38 |
| Undistributed expense | 381.38 |
| Construction and equipment account..... | 1,850.67 |
| Property, plant and equipment..... | 105,044.51 |
| Cash balance | 3,019.34 |
| Accounts receivable metered..... | 852.08 |
| Prepaid insurance | 133.34 |
| Supplies and material..... | 300.00 |
| Interest on funded debt..... | 58.00 |
| Total | \$118,321.25 |
| Credits. | |
| City of Hartford City Investments..... | \$95,044.51 |
| Funded debt | 9,200.00 |
| Accounts payable | 80.76 |
| Surplus accounts | 4,280.20 |
| Operating Revenues. | |
| Commercial earnings | \$6,779.36 |
| Industrial earnings | 1,556.74 |
| Street sprinkling | 104.30 |
| Miscellaneous earnings | 32.00 |
| Non-operating Revenues. | |
| Piping and connections (taps)..... | \$280.00 |
| Appropriation, tax levy..... | 989.04 |
| Miscellaneous | 24.34 |
| Total | \$118,321.25 |

FIRE AND POLICE

Work on Underground Fire Alarm.

Holyoke, Mass.—Holyoke's underground fire alarm system will be put in permanent use in a short time. Although the system has been practically ready for use for a long time, delays have held up its operation. When the underground system is in operation, the danger pointed out by commissioner James H. O'Connell caused by having aerial cables suspended across several buildings will be done away with. The Safety Insulated Wire and Cable Company, of New York, did the underground work, which, has been tested by Supt. of Fire Alarms T. M. Monohan.

California Town Wiped Out.

Loomis, Cal.—A fire wiped out the business section of the town of Loomis, Placer County, about 30 miles from Sacramento. The town was without a fire department and the only building left standing is the railway depot. The damage is estimated at \$100,000. The origin of the fire is unknown—within half an hour the whole town was doomed. Loomis has about 2,000 inhabitants and is the center of a fruit-producing region. The citizens were powerless to cope with the flames, but did fine service in saving the greater part of the contents of the buildings in the path of the fire.

Charleston Chief to Instruct South Carolina Departments.

Charleston, S. C.—State Insurance Commissioner McMasters has sent out a letter to fire departments all over the state announcing that Capt. Louis Behrens, chief of the fire department of Charleston, has generously offered his services to the state to visit the various towns to give the

municipal authorities, the fire departments and all others interested in fire prevention the benefit of his lifelong experience in fire fighting. It is planned to instruct the departments in the latest and most approved methods of fire-fighting; in the skilful use of equipment, in the methods of preventing damage to buildings, and more particularly to contents; to indicate methods of fire prevention and illustrate the benefits of inspection of buildings and premises by firemen.

Rochester Department in Action.

Rochester, N. Y.—Quick work by the fire department confined a blaze in the Clifton Hotel and reduced a possible serious damage to about \$1,300. Chief Little, all battalion chiefs and downtown companies and the Protectives answered the alarm. The accompanying illustration shows the extension ladder and water tower at work.

GOVERNMENT AND FINANCE

Iowa Cities to Lose Saloons.

Des Moines, Ia.—A conference has been held here of mayors of Iowa cities which will lose their saloons when the mulct law repeal becomes effective, January 1. The purpose was to discuss ways and means of meeting the loss in revenue to the cities which will be occasioned by the closing of saloons and for which no provision was made by the legislature when the mulct law was repealed. About nine cities concerned were represented at the meeting by their mayors, including Keokuk, Burlington, Marshalltown, Ottumwa, Des Moines and Creston. The convention was unofficial. It was called by Frank G. Pierce of Marshalltown, secretary of the Iowa League of Municipalities.

A New City Manager.

Thomasville, N. C.—Frank D. Jones of Hamlet, the newly appointed city manager, has taken charge. Mr. Jones was formerly city manager of Hamlet. The city manager form of government is new to Thomasville, a bill being passed in the last legislature allowing the town to take up the plan.

San Diego Saving Under Manager Plan.

San Diego, Cal.—Under the administration of manager of operations Lockwood a saving of from \$20,000 to \$30,000 a month in the cost of the consolidated departments is shown in the first monthly financial report. Assistant manager Bacon states that the saving quoted is exclusive of the expenditures eliminated when construction work was stopped. He said the money held back by laying off large numbers of laborers will soon be in circulation, as the department is resuming extensive repairs to the water department, and has others under consideration. The operating department on authority of the council has just installed its own ledger or accounting system of receipts and expenditures. These books are to conform with those of the auditor. According to Bacon the auditor will have daily access to them so he can tell at once whether they balance with those in the auditor's office. All receipts of the operating department, including the water, harbor, street and engineering funds, are now paid to one cashier and the money is then turned over to the treasurer. No foreman or any other employee is now permitted to start any construction, improvement or repair work of any nature without a work order issued by, or signed, by the manager of operations. This places sole responsibility for all expenditures for this class of work on the manager. The report charges wide discrepancies in the accounts of some departments prior to the new management, especially one where the department's books did not balance within \$20,000 of the auditor's books. This difference was not due so much to error, as to different methods of keeping accounts.

Pennsylvania Mayors May Succeed Themselves.

Harrisburg, Pa.—The first step toward deciding the point as to whether mayors of third-class cities may succeed themselves, has been made by the Luzerne county bench, which says that there is nothing to prevent such succession. The suit to decide the question which was brought up by Gov. Brumbaugh's veto of the Catlin bill specifically permitting succession in the mayoralty, was a friendly one. The decision will at once be appealed to the supreme court with a request for a quick decision so that the final word may be had in advance of the fall primaries. The decision is a very important one throughout the state. There are about thirty third-class cities and the mayors of them in a large majority of instances have announced themselves as candidates for re-election.

Pittsburgh's New Administrative Building.

Pittsburgh, Pa.—Ground has been broken for Pittsburgh's new city-county building, which is to be erected at a cost of \$3,000,000. In this splendid edifice will be housed all the city and county officials; it will serve as both city hall and county court house. In adopting this plan of having the city and county officials under one roof, Pittsburgh is following the lead of Philadelphia, which adopted the idea many years ago. It is hoped that this new building will be a step toward the final consolidation of city and county offices into one unit. County government, in the opinion of some of the speakers at the ceremony, is grossly inefficient and impractical, especially in those counties where a metropolitan city occupies a greater part of the county.

Developments in Nashville.

Nashville, Tenn.—The remarkable fight made by Harry S. Stokes and associate counsel, for taxpayers and Comptroller Burns, against the heads of the city government resulted in the decree of Chancellor Allison when he decided all the points to the disadvantage of the mayor and commissioners. Chancellor Allison's decree was sweeping. He first declined to dismiss the petition of Burns and citizens for a receiver; he appointed Deputy Clerk and Master T. J. Bailey to take evidence in all of the allegations against the heads of the city; he enjoined the head officials from carrying on any character of contract, tying up more than \$1,000,000 in work, a large portion of which Stokes maintained was fraudulently let. He enjoined the city from paying any money to the counsel that the mayor and commissioners had employed to fight the citizen's movement. He declined to dissolve the injunction against the head officials that restrained them from discharging the comptroller and reserved his decision on this question along with the appointment of a receiver. He set Aug. 5 for hearing on the report of evidence taken.

Meanwhile attorney Harry S. Stokes filed an ouster bill



Courtesy, Rochester (N.Y.) Evening Times.

ROCHESTER FIRE DEPARTMENT AT WORK.

in Chancellor Allison's court asking that Mayor Howse, Treasurer Myers and Commissioners Andrews, Elliott and Wilkerson be removed from office. This is the first attempt to apply the provisions of the bill recently enacted by the legislature providing for the removal of public officials for cause. John H. Dewitt, chairman of the county board of elections has before him a petition signed by 2,500 taxpayers requesting an election for the recall of all the city commissioners, and Mr. Dewitt has announced that the form is in compliance with the law, though the city commissioners have thirty days in which to purge the list of unqualified voters. One thousand other names are held in abeyance in the event the list should be purged of enough to bring the total to less than 1,800, the number required under the charter of the city for a recall and election for their successors. The ouster bill recites the evidence adduced at the hearing for a receiver as cause for the application of the ouster bill.

The defence followed by appeal to the Court of Civil Appeals at Knoxville, which granted a writ of supersedeas staying to a limited extent the effect of the decision of Chancellor Allison. The writ supersedes that part of the decree that restrains the city from paying the police and other employees of the police department; the firemen and employees of the fire department; and also that section which ties up certain street improvements. The writ leaves all other questions open for further adjudication. The writ does not touch the question of the receivership for Nashville. In other words, under the writ of the court the policemen and firemen and other city employees whose salaries are not involved in the probe of Nashville's municipal affairs can be paid, and all contracts for street work made in good faith and according to law will be carried out, but the question of what contracts were fraudulently or illegally obtained is left for future controversy and investigation. Meanwhile the evidence continues to be taken before Chancellor Allison. Sensational allegations regarding paving contracts and automobile purchases are being made.

RAPID TRANSIT

Detroit to Get Car Lines.

Detroit, Mich.—Officers of the Detroit United Railway, which operates the street railway system of Detroit, have agreed to sell the city lines of the company to the city, the approval of the directors and counsel of the company being transmitted by President J. C. Hutchins. The city commissioners immediately adopted a resolution giving the company until Aug. 2 to obtain the ratification of the security holders. The assent of the stockholders is said to be assured, as proxies for a majority of the shares are held by the directors. The terms of sale provide for a vote of the people on the question, and in case of a favorable vote, the price to be paid by the city is to be fixed by the Circuit Court sitting in chancery.

San Francisco's Municipal Cars Enjoined.

San Francisco, Cal.—The city has filed its formal answer to the suit of the United Railroads and the Sutter Street Railroad Company, in which a temporary injunction was issued restraining operation of two lines of the municipal railway over the Market street tracks of the United Railroads. The city's answer to the injunction suit is a flat denial of all contentions made by the United Railroads and its subsidiary, the Sutter Street Railway Company. Meanwhile the municipal cars continue to run over the tracks of the United Railroads despite the order restraining their operation issued by Judge George A. Sturtevant of the Superior Court. The company, in getting from the city its rights to run the Sutter street cars to the ferry on the outer Market street tracks, formally and in writing agreed that "all" cars of the Municipal Railway should have the right to run on those tracks. Yet now Judge Sturtevant, ex-director of the United Railroads, has decided that "all" does not mean "all," but "half" or "some" or "part." He held that the agreement did not provide for the municipal cars that run to the exposition now. The case was transferred to Judge Seawall, who refused to try it, so that the hearings are being held before Judge Troutt.

Attempt to Enjoin Transit Loan.

Philadelphia, Pa.—High speed transit affairs will remain in statu quo until after the hearing on July 26 before the Public Service Commission, at Harrisburg, on the application made for a certificate of public convenience for the Taylor project. This was decided when Judge Sulzberger, sitting as a court of equity, denied the petition for an injunction made by David E. Dallam to restrain the city from issuing bonds for the \$6,000,000 loan and from commencing work on the Broad street subway and the Frankfort elevated line. The ordinance had been passed by councils and signed by Mayor Blankenburg. For the injunction the judge substituted a cautionary order allowing the transit department to proceed with preliminaries, such as asking for bids and making contracts, as at present, provided no actual construction work is done until after the Public Service Commission hearing. Judge Sulzberger questioned his own right to grant an injunction in the case, because of the probable jurisdiction of the Service Commission in the matter. City Solicitor Ryan states that the Philadelphia Rapid Transit Company is back of the suit. To issue an injunction, he contended, would have a bad effect in that it would destroy confidence among the bidders and tend to raise prices. He said that he and City Controller Walton had no intention of expending any of the money received from the loan until after the decision of the Public Service Commission was made. With Mayor Blankenburg, these two officials are the administrators of the loan fund. It is stated that because he contends that in spending the \$6,000,000 provided for in the loan bill, the city will obligate itself to the expenditure of \$75,000,000, that Dallam sought the injunction against the issuance of the bonds.

Rhode Island Cities Tied Up by Car Strike.

Providence, R. I.—The strike of 2,400 members of the street carmen's union resulted in an almost complete tieup of the Rhode Island Company's system in every part of the state except Newport and Westerley. Out of 445 cars that are run in normal times only a few were in operation in this city, carrying but few passengers. Hundreds of persons walked to their offices and stores, and motor buses, of which about 300 are in operation in the city, were crowded on all their trips. The inability of the company and the representatives of the union to agree upon the method of choosing the board of arbitrators to consider the question of wages is the cause of the strike, according to the trustees and officers of the railroad company. The highest rate paid by the company at the present is 28½ cents an hour, this being after the third year in service. The men ask for 35 cents an hour as the maximum scale. The lowest wage is 23 cents an hour, this being for the first six months, and the men ask for 30 cents. They want to eliminate the present system of graded three-year rates, as it is maintained that a man is efficient after the first year, and as a competent employe he should receive an adequate wage.

After two days of strike and an all-night session of argument, Mayor Joseph H. Gainer was proposed as arbitrator and accepted by both sides. The men returned to work pending the choice of two more arbitrators to decide the contested points.

Pawtucket, R. I.—Not a car was running in the city as a result of the strike. Hundreds of motor buses were used to carry many of the factory employes to their places of business.

Woonsocket, R. I.—Local carbarns were locked and not a street car was in operation as a result of the strike. Jitneys carried hundreds from surrounding towns to the local mills and also conveyed Woonsocketers to factories in Burrillville and the Blackstone valley. Cars on the Milford, Attleboro and Woonsocket line ran as far as the state line at Blackstone. Seventy platform men and 13 track men were affected here. There was no disorder.

Philadelphia Jitney Men Fight Ordinance.

Philadelphia, Pa.—Appeal to the courts on the ground of unconstitutionality, and application for an injunction will be the jitney owners' answer to councils and the mayor on the ordinance passed and signed compelling them to be bonded to the extent of \$2,500, pay a \$50 license fee and operate only on a designated route. Signing the ordi-

nance, Mayor Blankenburg gave as his reason that he felt that regulation was of immediate and paramount importance and that defects in the ordinance would have to stay. In taking this action he put out of business the Rapid Transit Company's competitor, unless the courts intervene in favor of the jitney owners and their thousands of patrons. Meanwhile the three jitney associations are raising funds for a long legal fight so that all of the 1,300 jitney men may fight under one head. John H. Fow, counsel for the Philadelphia Jitney Association, declares that the city's financial interest in the P. R. T. made it illegal for it to attempt to regulate the business of a competitor. He said this was up to the public service commission.

More Jitney Regulation.

Flint, Mich.—An ordinance by Alderman Streat, regulating the jitney bus traffic has been adopted by the Common Council. The ordinance as originally introduced was amended and the provisions requiring the cars to operate continuously from 6 a. m. to 10 p. m., and the routing of the cars under instructions from the city clerk were cut out. The ordinance was vetoed by Mayor McKeighan as being prohibitive, but council immediately passed it over the veto.

Proprietors are required to provide surety bonds ranging from \$5,000 to \$10,000 for cars carrying from five to seven passengers and from \$10,000 to \$20,000 for those carrying more than seven passengers, according to the seating capacity as stipulated by the manufacturers.

The fare to be charged by the jitney buses is not more than five cents for one continuous ride. No passengers will be allowed to stand on the running boards or inside the machines, the number of passengers carried to be regulated by the seating capacity as stated by the manufacturer.

It is required that a complete description of the car be given and that the driver be a person "of good moral character" who must have had at least 90 days' experience in the operation of the machine and also requires that he wear a badge with his license number displayed. In case of an accident the driver is required to make an immediate report to the police department.

The license fee is \$25 per year for each five passenger machine and \$5 for each additional passenger for which the bus has capacity. A maximum penalty of \$100 fine or 90 days in jail or both is prescribed for violations.

The ordinance does not apply to automobiles, hacks or buses operating between railroad stations and hotels and residences.

Austin, Tex.—The city's jitney ordinance has been passed by the city commission. Because the ordinance contains a provision prohibiting the operation of jitney cars on Congress avenue between Fifth and Ninth streets, jitney drivers are expected to take the measure into court for a test, arguing that if the city requires them to pay a license, then they have the right to operate on any street.

The license fee is fixed at \$50 for five-passenger cars, \$75 for six-passenger cars and \$100 for seven passenger cars. Most of the cars in operation in Austin will come under the classification of the five-passenger vehicle. A bond of \$2,500 for the injury of one person in a jitney accident and a bond of \$5,000 for the maximum damages which can be demanded by several persons who may be injured in an accident constitute the provision of the ordinance which jitney men claim is the most stringent and the most difficult to conform to. School children are provided transportation at reduced rates when going to or from school, the ordinance stating that not more than 3c may be exacted for this service.

Charleston, W. Va.—The Charleston city council has passed a jitney ordinance. The ordinance provides as follows: A license fee of \$25 and an indemnity bond of \$2,500 for each car is required. Routes and schedules will be fixed by a committee to be appointed by Mayor Breece and the drivers will be licensed. No person under 18 years of age will be permitted to drive, and they will be prohibited from smoking or drinking while on duty. The cars will be required to give continuous service from 6 A. M. to 10:30 P. M. six days in the week. Maximum fare fixed at 10 cents. No person living in the city less than 90 days will be issued a permit.

Jitney Ordinance Litigation.

Fort Smith, Ark.—The jitney operators' union has won—temporarily at least—its fight against the enforcement of the city ordinance providing for an indemnifying bond of \$2,500 for each operator. It was announced by Mayor Henry C. Read that pending the union's contest in the courts against the law no effort would be made to enforce it. The chancery court has upheld the ordinance which is now pending on appeal before the Supreme Court and until that tribunal upholds the lower court the ordinance will not be operative.

There are now 22 jitney cars operating in the city. The city ordinance provides a bond of \$2,500 for each car, which, the operators say, will force them out of business entirely.

Fort Worth, Tex.—The temporary injunction which had restrained city officials from enforcing the new jitney ordinance was dissolved by Judge Brown of the Sixty-seventh District Court, who held that he did not have the power to suspend further the operation of the ordinance after he had passed on the application for injunction. "No man has a natural or inherent right to use the streets of Fort Worth to ply his trade or vocation," said Judge Brown in announcing his decision. "The streets are public highways for the use or convenience of the public and the city is nothing but a trustee, supervising the streets for the benefit of the public which uses them. It is incumbent on it to see that they are used in a manner which is not dangerous to the rights of the general public." It is alleged by the operators that the insurance required by the ordinance will cost at least \$200 per car and that the license tax and other fees required bring the total cost up to \$340 per year for each car. A few of the operators have bonds, but the police are lenient with the others. There is a plan to form a pool of \$125,000 to give each jitney the required bond of \$2,500.

New Orleans, La.—A New Orleans ordinance designed to regulate jitney traffic was upheld here by the state supreme court and temporary injunction obtained in the civil district court by jitney owners to prevent city authorities from enforcing the law was dismissed. Owners of jitneys objected principally to a provision of the ordinance which stipulated that all owners must give an indemnity bond of \$5,000.

MISCELLANEOUS

To Organize New Jersey's State Engineering.

Trenton, N. J.—Representatives of twelve state departments met with Governor Fielder and inaugurated, under one of the Economy and Efficiency acts passed by the last legislature, a plan for co-operation in all the engineering work of the state. The act provides for an informal organization and a monthly meeting for the purpose of preventing duplication in engineering work and bringing greater economy. The governor presided and State Forester Alfred Gaskill, director of the department of conservation and development, was made secretary. It was decided to hold the regular meeting on the third Thursday of each month at the state house. State Road Commissioner Edwin A. Stevens, Dr. Philander Betts, inspector of the Public Utility Commission, and B. F. Cresson of Jersey City, chief engineer of the Department of Commerce and Navigation, were made a committee to prepare a plan for collecting data as to all state engineering work and providing a central office in the State House where any department may get information thereon. This will be a step in the prevention of duplication of surveying and other engineering labor. The departments represented were: Public Roads, Public Utility, Commerce and Navigation, Conservation and Development, Architect, Agriculture, Health, Labor, Civil Service, Taxes and Assessments, Motor Vehicle and Water Supply.

Passaic Wins Its Slank Case.

Passaic, N. J.—Plans of Passaic to complete its project for a park on Dundee Island, including the slank in the Passaic river, have been revived by a decision of the Supreme Court at Trenton, setting aside jury verdicts in nine ejectment proceedings brought by the state to regain possession of parts of the slank, alleged to have been illegally pre-empted by owners of upland property. The slank project has been fought in the courts and the legislature for many years, but its completion has invariably been thwarted by opposing property owners. The city based its claim to the slank on a riparian grant, the validity of which was contested on the ground that the state had lost title to the property. Finally ejectment proceedings in behalf of the state were decided upon and the assistance of the attorney-general's office was obtained in prosecuting them. The issue before the jury involved the weight to be given conflicting testimony, as be-

tween official surveys, made for the purpose of taxation, and the memories of witnesses called in behalf of the protesting property owners. The evidence of these witnesses apparently controlled the jury verdict, and it was on the ground that such a finding was contrary to the clear preponderance of testimony that the Supreme Court set aside the verdicts and ordered new trials. The city has fenced off the land it has won and is protecting the fence with special guards.

Bridge Traffic in New York.

New York, N. Y.—The Public Service Commission for the First District has received from the Bridge Department the result of the annual count of passengers using the East river bridges in one period of 24 hours. The count was made on November 5, 1914, from midnight to midnight. It shows a total traffic in both directions over all bridges of 763,082, which is an increase of 20,090 over the previous year. This is a gain of about 3 per cent, and much smaller than the gain of 1913 over 1912, which was more than 12 per cent. The Williamsburg bridge still continues in the lead, carrying more passengers than the old Brooklyn bridge. The latter is only one of the four bridges which shows a positive falling off in the number of passengers using it. The figures include passengers in surface and elevated cars, in all kinds of vehicles and pedestrians using the promenades. The total traffic in 1912 was 659,591, and in 1913, 742,992.

Reclaiming a City from a Swamp.

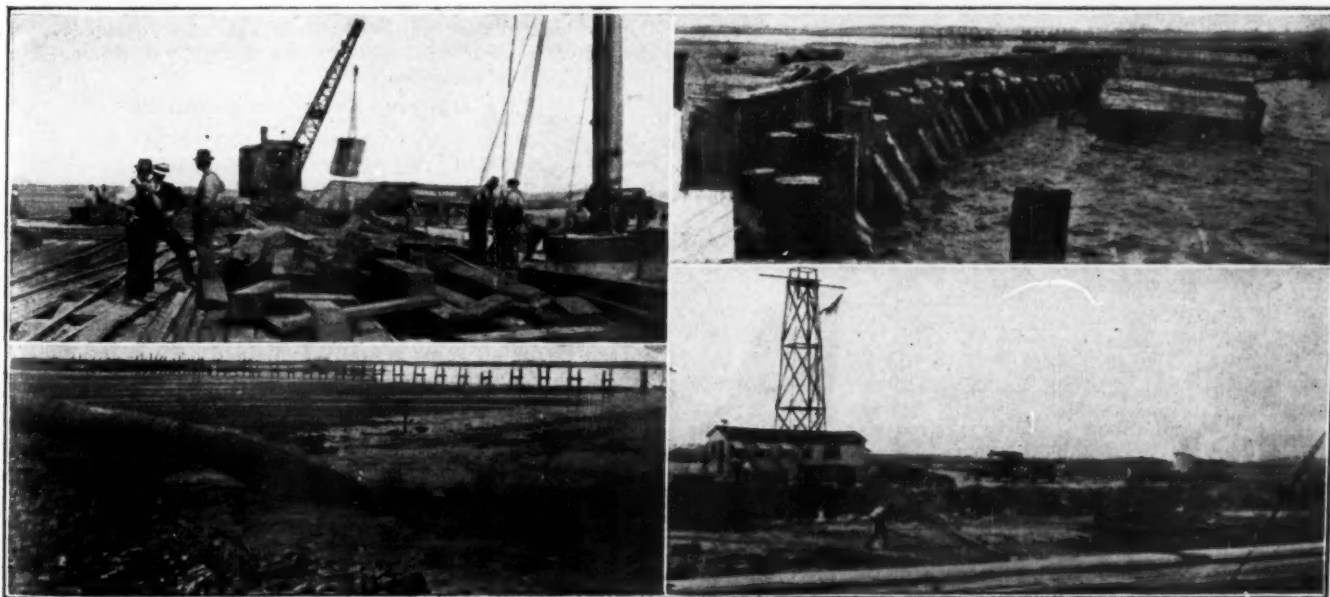
Newark, N. J.—Sixteen city blocks of hard ground ready for great buildings where a year ago there was an impassable swamp, are the present results of the meadow work carried on by the city. Work was started on the particular section that is being filled on June 5 last year. Dikes and bulkheads were constructed around the area and into this space there was pumped the soft mud, sand and clay from the bottom of the bay along the seventeen-foot channel that is to be part of the development. This material flows in a steady stream through twenty-nine-inch steel pipes on the soft meadows and finally, when it has dried and settled, the level of the swamp has been raised six feet. Just at present the filling has been almost entirely to the territory north of the ship canal and basin. This canal, 200 feet wide, has been dredged out to a uniform depth of seventeen feet, so that it is figured that large vessels will be able to run in without difficulty. Along the edge of the canal and parallel to it has been constructed a great dock more than fifty feet wide. On this has been laid standard gage tracks, so that freight cars from the railroads which traverse the meadows will be able to run out there and take on or discharge freight. Along the inner edge of this dock has been constructed a concrete retaining

wall against which to fill. Outside of this wall and beneath the dock itself, which is built on piles, they are now dumping thousands of tons of "rip-rap" which is obtained from the tunnel excavation of the New York subway system. It is estimated that more than 40,000 tons of the rock will be used. The material is brought to the dock on scows and dumped with the aid of a big locomotive crane. Out from this concrete wall extends in a long curve the pile bulkhead, behind which the filling will continue. This bulkhead extends 3,500 feet into the bay as far as the city pierhead line, which is 600 feet inside the government bulkhead line. The contractors, O'Gara & McGuire, have completed the fill up to the concrete bulkheads. The portion of the land already filled has been laid out with "paper streets," and blue enamel signs have been placed at the corners. During the summer many of these streets will be paved. A railway system is to be installed on the meadows. Every street will have tracks connected with the docks so that freight cars may be run directly to the factories. These cars will be moved by electric storage battery locomotives. There have been a great many inquiries from manufacturers throughout the country for space on the reclaimed land. None of these has yet closed a deal. The tract has been divided tentatively into ten-acre parcels, but from the nature of the negotiations so far it has become apparent that some revision must be made so that larger tracts may be provided for. This plan is already under consideration by the board. Some views of the work are shown in the accompanying illustration.

The common council has just authorized the sale of \$750,000 4½ per cent, 45-year bonds for dock, meadow and bay front improvement. All previous issues of dock and meadow bonds had been made to run 45 years.

Town Planning in Nova Scotia.

Halifax, Can.—The last session of the provincial legislature of Nova Scotia passed a law for town planning in the Province which is generally regarded as most advanced legislation. General supervision of carrying out the various provisions of this law devolves upon the Provincial Commissioner of Public Works and Mines. Local boards are to be created in every city, town or municipality, and these boards are required within three years after passing of the act to prepare a set of town-planning by-laws for adoption in its area. The commissioner may, under the provisions of the act, prescribe "a set of model bylaws for adoption by any local board," and the commissioner's approval to all town planning schemes is necessary. Certain provisions of the act made mandatory cover streets and thoroughfares, building lines, building limitations, etc.



Courtesy, Newark (N.J.) Evening News.

RECLAIMING THE NEWARK MEADOWS.

Crane at Work.
Discharge of Fill from Dredge.

Bulkhead of Ship Canal.
View of part of Developed Area.

LEGAL NEWS

A Summary and Notes of Recent Decisions— Rulings of Interest to Municipalities

Actions for Damages—Measure of Damages.

City of Huntsville v. Goodenrath.—Where a city takes or injures property without resorting to condemnation proceedings, the measure of damages in a suit by the property owner is the same as it would have been in the condemnation proceedings, had they been resorted to.—Court of Appeals of Alabama, 68 S. R., 676.

Streets—Necessity of Acceptance.

Mulligan et al. v. McGregor et al.; Patterson et al. v. Same.—The mere dedication of a highway within the territorial limits of a city to the use of the public, however long such use may be continued, does not put upon the city the duty of accepting such street, nor can it be charged with the care of the way merely by virtue of the dedication, the election whether it will assume the burdens of acceptance resting upon the city itself.—Court of Appeals of Kentucky, 176 S. W. R., 1129.

Village Trustee—Grounds for Removal.

Collman v. Wanamaker.—Under the provisions of section 7459, Rev. Codes, providing summary proceedings for the removal of certain officers, there are only two offenses for which an action to remove a defendant may be prosecuted, to wit: (1) For charging and collecting illegal fees for services rendered or to be rendered in his office; (2) where the officer has refused or neglected to perform the official duties pertaining to his office.—Supreme Court of Idaho, 149 P. R., 292.

Action on Tax Bill—Sufficiency of Petition.

City of Gallatin ex rel. Poage v. Netherton.—In an action on a special tax bill, an allegation in the petition that the assessment was made by the aldermen, in and by such special tax bill, did not render the petition defective, where subsequent allegations showed beyond question that the assessment was made in a special ordinance enacted before the issuance of the tax bill, as required by Rev. St. 1909, § 9656, providing that the cost of street improvement shall be levied by special assessment, and that such assessment shall be levied by ordinance.—Kansas City Court of Appeals, Missouri, 176 S. W. R., 495.

Incorporation of Town—Statutes—Notice.

Faulkner et al. v. Board of Supervisors of Gila County.—Under Civ. Code 1913, par. 1822, providing that whenever two-thirds of the taxable inhabitants of any town containing a population of 500 or more shall present their petition to the board of county supervisors, and the supervisors shall be satisfied that two-thirds of the taxable inhabitants have signed such petition, they may, by an order of record, incorporate such town, the board of supervisors, on consideration of a petition for the incorporation of a town, fair and legal upon its face, is not required to give any notice of the petition or any hearing thereon.—Supreme Court of Arizona, 149 P. R., 382.

Pollution of Stream—Parties Liable.

Kraver et al. v. Smith.—Though a city may control and regulate its sewers and the character of sewerage which any property owner may discharge into the sewer, and though no property owner has a right to connect a private sewer with a city sewer without the city's consent, where a city board of health, with knowledge of the character of sewerage from a distillery, ordered the person operating the distillery to make a connection with the city sewer, and he did so by the authority of the city and under the supervision of its engineering department, and the city did not by ordinance regulate the quantity or character of sewerage which he was authorized to discharge into the sewer, it was thereafter the city's duty to take care of the sewerage, and the distillery proprietor was not liable to riparian owners for the pollution of a stream caused by emptying such sewerage into the stream.—Court of Appeals of Kentucky, 177 S. W. R., 286.

Ordinances—Necessity of Publication.

Vernakes v. City of South Haven.—In absence of charter provision providing that ordinances shall not take effect until after publication, the omission to publish an ordinance or to append the certificate required is not fatal to its validity.—Supreme Court of Michigan, 152 N. W. R., 919.

Taxation—Assessment—"Abutting Property."

People ex rel. New York, W. & B. Ry. Co. et al. v. Waldorf, Mayor et al.—That property abutting on a street to be widened may be assessed, it is not necessary that the entire boundary of the land should lie along or touch such land.—Supreme Court, Appellate Division, Second Department, 153 N. Y. S., 1072.

Defective Walks—Injuries—Liability.

Horan v. City of Independence.—Where a pedestrian was injured when a crossing over a ditch wobbled as she stepped on it because the earth under one corner had been washed away, the city cannot escape liability on the theory that the injury was caused by a defect in the general plan of construction.—Kansas City Court of Appeals, Missouri, 176 S. W. R., 1061.

Paving—Publication of Resolution—Injunction.

Pitser v. City of Pawnee et al.—An injunction will not lie to restrain the publication of a resolution of a city council declaring that a necessity exists for the paving of certain streets of such city at the instance of a taxpaying property owner within the proposed improvement district, as such suit is premature.—Supreme Court of Oklahoma, 149 P. R., 201.

Diversion of Water—Constructing Sewers—Enjoining.

Thomas v. City of Grinnell et al.—Where the diversion would not materially affect a stream or injure plaintiff, a riparian proprietor, the fact that a proposed sewerage system would divert percolating waters from their natural drainage is no ground for an injunction. Where there was a showing that the establishment of the sewerage system and disposition plant would not pollute the waters of a stream or cast filth upon the land of a riparian owner, the construction of the system will not be enjoined.—Supreme Court of Iowa, 153 N. W. R., 91.

Vacancies in Office—Mayor.

State ex rel. Dyer v. Kirkpatrick.—Pendleton city charter (Laws 1899, p. 711) provided that the council shall select one of its members to preside over the body and perform the duties of the mayor, in case of his absence or inability to act. Other portions of the charter provide for the filling of any vacancies in office by appointment of the mayor with consent of the council. Held, that, as other vacancies were so carefully provided for, the chairman of the council, in case of the death of the mayor, succeeds to the office until it can be regularly filled by election.—Supreme Court of Oregon, 148 P. R., 51.

City Officers—Extra Compensation.

Chappell v. City of Newkirk.—C. was elected city attorney of Newkirk in 1907, and served four years. In December, 1907, he defended the city in two lawsuits, pending when he took office. In 1908, he defended two other suits. In 1909, he entered the appearance of the city in the Supreme Court, by direction of the city council, which at the same time, entered into a written contract with two other attorneys, to represent the city, stipulating that they should be paid reasonable compensation. The city reimbursed C. for all sums actually expended by him in connection with the litigation. During all of the times in which a claim is made for extra compensation, C. was receiving the salary provided by law. No claim was ever made for extra compensation during the four years he was in office, and not until in March, 1912, after the official relations had terminated. C. bases his right to recover on the theory that the services were "extra official," and that the law would raise, out of the conduct of the parties, an implied promise to pay. Held, that the law will not raise an implied promise to pay extra compensation, out of the conduct of the parties, viewed in the light of the official relationship existing.—Supreme Court of Oklahoma, 149 P. R., 140.

Constructing Sewers—Trespass.

Fausler et al. v. City of Sedalia.—A city constructing a sewer emptying into a stream above the land of a riparian owner does not thereby commit a trespass on the land, though the flow of sewage with the waters of the stream may invade a substantial right of the owner.—Kansas City Court of Appeals, Missouri, 176 S. W. R., 1102.

Obstruction to Streets—Nuisance—Injunction.

Baltimore & Ohio R. R. Co. v. Gilmor et al.—The obstruction of a highway is a "common nuisance," and, being a public wrong, the remedy is by indictment, and only individuals who may maintain a civil action are those suffering peculiar damage; hence, where complainants did not show that the obstruction of a highway in a town would cause them peculiar damage, they are not entitled to an injunction.—Court of Appeals of Maryland, 94 A. R., 200.

Street Improvements—Ordinances—Title—Sufficiency.

McQueen v. Van Deusen et al.—The title of an ordinance, entitled an ordinance to provide for the concrete paving and curbing of a highway described, is sufficient under Rev. St. 1909, § 8555, providing that no bill shall contain more than one subject, which shall be set forth in the title, though the paving called for in the body of the bill calls for the paving of streets of different names, but constituting in view of the topography of the territory one continuous highway.—Kansas City Court of Appeals, Missouri, 176 S. W. R., 1057.

Streets—Vacation of Plat—Statute.

Consumers Co. v. City of Chicago.—Under Hurd's Rev. St. 1913, c. 109, sec. 6, providing for the vacation of a plat at any time before the sale of any lots, and sec. 7 providing for the vacation of any part of a plat where such vacation will not infringe upon the rights of other proprietors, the mere fact that the streets and alleys sought to be vacated are stub ends running to a railroad right of way, over which the city has acquired no crossing, does not defeat the right of persons, who purchased lots on the plat before the attempted vacation, to object to such vacation, since the city may at any time construct crossings when the same becomes necessary.—Supreme Court of Illinois, 108 N. E. R., 1017.

Public Improvements—Assessment of Benefits—Offsetting Damages.

City of Spokane v. Onstine et al.—Where a city sued to determine the damages to abutting owners from a change in a street grade, and upon the entry of judgment had the matter referred to the eminent domain commission for an assessment of such damages, the only question on confirming the assessment roll was whether there was an equitable assessment, and neither the court nor the eminent domain commission could consider any damage that property sought to be assessed might have suffered by reason of the change of grade, as the law provides that such damages shall be assessed by a jury, and the property owners should have brought an action or intervened in the eminent domain case.—Supreme Court of Washington, 149 P. R., 1.

Lighting Contracts—Validity.

City of Mena v. Tomlinson Bros.—Kirby's Dig. Secs. 5443-5448, authorizes municipalities to enter into contracts for the lighting of streets and parks. Section 5643 provides that the board of public affairs of the city shall have exclusive power to make purchases for the city where the expenditure is less than \$300. Section 5607 declares that the city council shall possess all legislative powers; while section 5601 provides that a majority of the whole number of aldermen shall be necessary to constitute a quorum, and section 5473 that to pass any by-law or ordinance a concurrence of the majority of the whole number of members elected to the council shall be required. Held that, where the expenditure for lighting considerably exceeded \$300, the city council might at an adjourned meeting contract for the service by enacting an ordinance which was accepted by the lighting company; action by the board of public affairs being unnecessary.—Supreme Court of Arkansas, 175 S. W. R., 1137.

Franchise—Regulation.

People ex rel. Queens Borough Gas & Electric Co. v. Connolly, Borough President, et al.—The right to lay gas mains in the streets, being a "franchise" granted for the service of the public, is subject to regulation in the interest of the public.—Supreme Court, Special Term, Queens County, 153 N. Y. S., 721.

Title to Office—De Facto Officer.

North v. City of Battle Creek.—Under the charter of Battle Creek, which was adopted by the voters in 1913, at the same election at which officers under the old charter were elected, and which provided that if it should be approved by the voters, all appointive officers whose terms had not expired should continue in office until their successors were appointed by the commission created by the charter, the city attorney who was in office at the time the charter was officially declared, on which date at the latest it became effective, continued in office, and one appointed thereafter by the newly elected mayor under the provisions of the former charter was not even a de facto officer.—Supreme Court of Michigan, 152 N. W. R., 194.

Assessments of Benefits—Indebtedness.

German Nat. Bank of Covington v. City of Covington.—Where a city having power to make a street improvement, but without power to have the cost assessed against the abutting property in excess of 50 per cent of the value thereof, contracted for street improvements, the cost of which exceeded 50 per cent. of the value of the abutting property, and issued bonds for the cost of the work and pledged its credit for their payment, and the bond issue was taken over by the contractor, who completed the work, the obligation incurred by the city was an indebtedness within Const. § 157, limiting municipal indebtedness; and, where the debt created exceeded the debt limit, any holder of the bonds could not recover from the city thereon.—Court of Appeals of Kentucky, 175 S. W. R., 330.

Police Force—Removal of Patrolman—"Probation."

People ex rel. Walter v. Woods, Police Commissioner.—Civil Service Law (Consol. Laws, c. 7) § 9, provides that all appointments in the classified service, with certain exceptions, shall be for a probationary term. A rule of a municipal civil service commission required that, if a probationer's conduct or capacity on probation should be unsatisfactory, he be notified that at the end of the probation period he would not be retained. Held, that a police commissioner was authorized to investigate the past record of a probationer and refuse to retain him upon the expiration of the probationary appointment because of his record, though he properly performed his duties during the probationary period, as "probation" signifies a proceeding to ascertain the truth or to determine character and qualification, and the rule of the commission did not limit the full scope and purpose of the probation commanded by the statute.—Supreme Court, Appellate Division, Second Department, 153 N. Y. S., 822.

Breach of Contract—Contractor's Bond—Damages.

Maryland Casualty Co. et al. v. Town of Wellston.—The town of W. entered into a contract with S. & Son, to construct a system of waterworks for said town, by the terms of which S. & Son agreed to take the entire issue of the bonds of said town, issued for the purpose of constructing said waterworks, and in consideration of said bonds to construct a system of waterworks according to plans and specifications agreed upon, and a surety company executed and delivered to the town of W. an indemnity bond conditioned that "if the principal shall indemnify the obligee against any loss or damage directly arising by reason of the failure of the principal to perform said contract," and upon the execution and delivery of said contract and bond of indemnity the town delivered to the contractor its negotiable coupon bonds, and thereafter the contractor neglected and refused to construct said waterworks under the terms of said contract, held, the town was entitled to recover upon the bond, as damages for a breach of the contract, a sum equal to the par value of the bonds so delivered.—Supreme Court of Oklahoma, 148 P. R., 691.

NEWS OF THE SOCIETIES

Calendar of Meetings.

July 20-23.
IOWA STATE FIREMEN'S ASSOCIATION.—Annual Convention, Iowa City. Secretary, E. E. Parsons, Marion.
July 27-29.
ILLINOIS STATE FIREMEN'S ASSOCIATION.—Annual Convention, Blue Island. Secretary, Walter E. Price Champaign.
Aug. 2-4.
PROVINCIAL FIREMEN'S ASSOCIATION OF ONTARIO.—Annual Convention, Thorold. Secretary, W. J. Thompson, 282 Western Ave., Toronto.
Aug. 2-6.
GOOD ROADS CONGRESS.—San Francisco, Cal., under the auspices of the Tri-State Good Road Association.
Aug. 3-5.
OHIO STATE FIREMEN'S ASSOCIATION.—Annual Convention, Bellaire, O.
Aug. 3-5.
WISCONSIN PAID FIREMEN'S ASSOCIATION.—Annual Convention, Marinette, Wis. Secretary, Ole Norman, Fire Dept., Superior, Wis.
Aug. 4-5.
TEXAS GOOD ROADS ASSOCIATION AND COUNTY JUDGES' AND COMMISSIONERS' ASSOCIATION.—Midsummer meeting, Agricultural and Mechanical College of Texas, College Stat., Tex. Secretary, Texas Good Roads Assoc., D. E. Colp, San Antonio.
Aug. 18-19.
CONNECTICUT STATE FIREMEN'S ASSOCIATION.—Annual Convention, New Haven. Secretary, Chief R. V. Magee, Watertown, Conn.
Aug. 18-19.
MONTANA STATE FIREMEN'S ASSOCIATION.—Annual Convention, Lewistown.
Aug. 24-27.
PROVINCIAL ASSOCIATION OF FIRE CHIEFS.—Annual Convention, Ottawa, Ont. Secretary, Chief James Armstrong, Kingston, Ont.
August 24-27.
INTERNATIONAL ASSOCIATION OF MUNICIPAL ELECTRICIANS. Twentieth Annual Convention, Gibson Hotel, Cincinnati, O. Secretary, Clarence R. George, Houston, Tex.
Aug. 31-Sept. 3.
INTERNATIONAL ASSOCIATION OF FIRE ENGINEERS.—Annual Convention, Cincinnati, O.
Sept. 7-9.
NEW ENGLAND WATERWORKS ASSOCIATION.—Annual Convention, New York City. Secretary, Willard Kent, 715 Tremont Temple, Boston, Mass.
Sept. 7-9.
NATIONAL FIREMEN'S ASSOCIATION.—Annual Convention, Rockford, Ill. Secretary, W. F. Gillooley, Davenport, Ia.
Sept. 13-19.
PAN-AMERICAN ROAD CONGRESS.—Held by American Road Builders' Association and the American Highway Association. Oakland, Cal.
September 16-18.
AMERICAN SOCIETY OF CIVIL ENGINEERS. Convention, San Francisco. Secretary, Charles W. Hunt, 220 West 57th St., New York City.
Sept. 16-18.
AMERICAN ELECTROCHEMICAL SOCIETY.—Twenty-eighth annual general meeting, San Francisco. J. M. Muir, 239 West 39th street, New York City, Chairman of Transportation Committee.
September 16-18.
AMERICAN SOCIETY OF MECHANICAL ENGINEERS. Convention, San Francisco. Secretary, Calvin W. Rice, 29 West 39th St., New York City.
September 16-18.
AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS. Convention, San Francisco. Secretary, F. L. Hutchinson, 29 West 39th St., New York City.
September 16-25.
INTERNATIONAL ENGINEERING CONGRESS.—Am. Soc. C. E., Am. Inst. Min. E., Am. Soc. Mech. E., Am. Inst. E. E. and Soc. N. A. & M. E., San Francisco, Cal. Secretary, W. A. Catell, Foxcroft Building, San Francisco, Cal.
Sept. 22-24.
MASSACHUSETTS STATE FIREMEN'S ASSOCIATION.—Annual convention, Haverhill, Mass. George Wilson, Lynn, Mass., Chairman of Committee.
September 27-30.
SAFETY CONFERENCE. San Francisco.
Sept. 27-Oct. 1.
PACIFIC COAST FIRE CHIEFS' ASSOCIATION.—Annual Convention, San Francisco. Secretary, Harry W. Bringham, Fire Marshal, Seattle, Wash.
September 27-October 1.
INTERNATIONAL GAS CONGRESS AND AMERICAN GAS INSTITUTE. Convention,

San Francisco. Secretary, George C. Ramsdell, 29 West 39th St., New York City.
Sept. 29-Oct. 1.

MASSACHUSETTS STATE FIREMEN'S ASSOCIATION.—Thirty-sixth Annual Convention, Haverhill. Secretary, D. Arthur Burt, Taunton.
Oct. 5-8.

PENNSYLVANIA STATE FIREMEN'S ASSOCIATION.—Annual Convention, Philadelphia. President, Miles S. Humphreys, Pittsburgh, Pa.
October 4-9.

AMERICAN ELECTRIC RAILWAY ASSOCIATION. Convention, San Francisco. Secretary, E. B. Burritt, 8 West 40th St., New York City.
Oct. 11-15.

NATIONAL PAVING BRICK MANUFACTURERS' ASSOCIATION.—Annual Convention, Dayton, O. Secretary, Will P. Blair, B. of L. E. Bldg., Cleveland, O.
October 12-15.

AMERICAN SOCIETY OF MUNICIPAL IMPROVEMENTS.—Annual Convention, Dayton, O. Secretary, Charles Carroll Brown, 702 Wulsin Bldg., Indianapolis, Ind.
November 17-19.

NATIONAL MUNICIPAL LEAGUE.—Annual Convention, Dayton, O. Secretary, Clinton Rogers Woodruff, 705 North American Bldg., Philadelphia, Pa.
Dec. 27-Jan. 8, 1916.

SECOND PAN-AMERICAN SCIENTIFIC CONGRESS.—Washington, D. C., Department of State, Washington.

Pan-American Road Congress.

In response to invitations sent out by the chairman of the executive committee, Hon. Charles W. Gates, Governor of Vermont, the governors of the several states are showing keen interest in the Pan-American Road Congress by appointing delegates to represent their states. Assurances are given that the governors of several Western states, including California, Oregon and Washington, will be present when the congress meets in Oakland, Cal., Sept. 13, 1915.

The Pan-American Road Congress will be held under the joint auspices of the American Road Builders' Association, and the American Highway Association, with the Tri-State Good Roads Association in co-operation.

At a meeting of the executive committee just held, reports of the chairmen of the various sub-committees showed most satisfactory progress. It is expected that the tentative program will be ready for distribution in a few days.

The people of Oakland propose to entertain the delegates most royally. A smoker and also a luncheon are among the things that are at present talked of, together with an automobile inspection trip covering recent highway construction in California. Following the Congress it is expected that some excursions will be arranged for the delegates covering points of interest in California.

The local representatives appointed by the executive committee to look after the interests of the congress are accepting their assignment with much enthusiasm. It is believed that this plan will insure wide publicity and consequently a greatly increased attendance.

The executive committee of five, in whose hands have been placed the plans for the Pan-American Road Congress, consists of Governor Charles W. Gates, chairman; W. W. Crosby, former state highway engineer of Maryland; James

H. MacDonald, former state highway commissioner of Connecticut; J. E. Pennybacker, chief, division of Economics, U. S. Office of Public Roads and Rural Engineering, and E. L. Powers, editor of "Good Roads."

Conference on Flood Prevention.

A meeting was held at Topeka, Kansas, July 9, to discuss methods of flood protection. The meeting was called by Governor Capper to attempt to work out some plan for preventing the enormous losses occasioned by the floods on the Kaw River. A plan was presented for impounding the flood waters of the Kaw by means of 76 reservoirs, but it will be difficult to finance this.

As a result of the high water of the last few months, 650 bridges were damaged or destroyed by the high water, according to W. S. Gearhart, state engineer, who told the flood congress of the damage from an angle which represented a half million dollars. In addition of the \$500,000 bridge damage, Gearhart said the damage to roads and highways amounted to \$375,000.

"It is not possible to estimate damage due to interfering with traffic, the delay in marketing farm crops and the suspension of business," said Gearhart. "These losses, where the river bridges are out, will be very great for it will require from three to six months to rebuild them."

Gearhart estimated losses to bridges in Kansas in the last fifteen years at not less than \$3,000,000.

As a result of the conference in Topeka plans will be developed for state aid for flood prevention. A score of prominent men interested in the subject will be appointed to draft plans and make recommendations to the next legislature.

A permanent committee appointed to work out a plan for flood prevention is composed of Governor Capper, T. J. Strickler, engineer public utilities commission; J. C. Mohler, secretary state board agriculture; Col. Herbert Deakyn, Kansas City; A. A. Robinson, Topeka; Mayor Charles W. Green, Kansas City, Kan.; George Plumb, Emporia; J. C. Strong, Blue Rapids; Charles T. Estes, Abilene; Charles E. Huss, mayor of Russell, and members of the engineering departments of Kansas University and the State Agricultural College.

New England States Association of Stationary Engineers and the New England Association of Commercial Engineers.

The New England States Association of Stationary Engineers and the New England Association of Commercial Engineers held conventions in Holyoke, Mass., July 9, the former in Temperance Hall and the latter in the Chamber of Commerce rooms.

The Commercial Engineers elected officers and heard reports of the different committees. Plans were made for the 1916 convention, which is to be held in Fall River.

Officers were elected by the Commercial Engineers as follows: James W. H. Myrick, president; vice-president, Chas.

G. Campbell, of Boston; treasurer, Herbert E. Stone, of Framingham; secretary, Louis L. Warren; directors: William K. Campbell, retiring president, of Boston; Claude E. Allen, of Boston; Fred A. Fordesman, of Boston. The president is a member ex-officio of the board of directors.

The Texas Good Roads Association and County Judges and Commissioners' Association.

A joint meeting of the Texas Good Roads Association and the County Judges' and Commissioners' Association will be held at the A. & M. College of Texas on August 5, 6 and 7. The program follows:

Thursday, August 5th.

A. M. Registration and Commercial Exhibits.

2 P. M. (Dean D. W. Spence, Presiding.)

Address of welcome on behalf of A. and M. College. Dr. W. B. Bizzell, President.

Address of welcome on behalf of Brazos County. Judge J. T. Maloney.

Response on behalf of County Judges and Commissioners' Association. Judge George N. Denton, President.

Response on behalf of Texas Good Roads Association. John W. Warren, president.

Announcement of Committees, etc.

Inspection trip.

8 P. M. Illustrated lectures and moving pictures showing different methods of road construction.

Friday, August 6th.

9 A. M. (Judge Denton Presiding.)

Should a Highway Engineer or competent County Road Superintendent be employed by wealthier counties when only the road and bridge fund is to be expended on roads? Judge J. R. Davis, San Antonio, followed by general discussion by County Judges and Commissioners.

Are special road laws advisable? Judge J. P. Pool, Victoria, followed by general discussion.

Should a commissioner be supreme in the expenditure of money in his own precinct? James Miller, Commissioner, Dallas, followed by general discussion.

County Convict Labor:

(a) How do you handle convicts?

(b) Are they satisfactory in handling road graders?

(c) Do you use the "bat"?

(d) Should chains be used indiscriminately? Judge W. N. Tidwell, Waxahachie, followed by general discussion.

Girls' Training School. Judge Quentin D. Corley, Dallas.

2 P. M. (Mr. Warren, Presiding.)

Address—Gov. Jas. E. Ferguson.

Highway Legislation, State and County. A. N. Johnson, Bureau of Municipal Research, New York. Discussion by L. E. Boykin, U. S. Office of Public Roads; Senator H.

L. Darwin of Cooper; Judge A. J. Eylers of El Paso, and R. L. Potts of Waco. Followed by general discussion.

(Session to include discussion of bill for State Highway Commission and organization of county highway department.)

8 P. M. Banquet.

Saturday, August 7th.

9 A. M.

Maintenance of Improved Roads

Dr. L. I. Hewes, U. S. Office of Public Roads. Discussion by A. N. Johnson, Bureau of Municipal Research, New York; Lamar Cobb, State Highway Engineer of Arizona, and John B. Hawley, President Texas Association of Members of the American Society of Civil Engineers. Followed by general discussion.

Road School. Question Box. General Discussion.

Practically every road material and machinery company doing business in Texas has arranged for an exhibit at the convention. There will also be a demonstration of bituminous macadam driveway, a gravel driveway and concrete sidewalk under construction during the meeting. Touring parties are being organized by different auto clubs of the state to take motor trips to the convention.

Conference of Fire Chiefs.

Under the auspices of the Ohio State Fire Protection Association, a meeting was held at Columbus, O., July 20, of all the fire chiefs within a radius of fifty miles of Columbus for the purpose of developing co-operation among the different fire-fighting heads. Chief Lauer, of the Columbus department, welcomed the chiefs.

New Jersey State Association of Boards of Chosen Freeholders.

The State Association of Boards of Chosen Freeholders held a meeting at the State House July 12 and agreed to hold the annual meeting of the association at Atlantic City, September 4, when the subjects of interest to various boards in all parts of the state will be given consideration.

Kansas State Firemen's Association.

The twenty-eighth annual convention and tournament of the Kansas State Firemen's Association was held at Coffeyville, July 5-7. There was an address by State Fire Marshal L. T. Hussey, which was followed by short talks by the officers.

The election of officers was as follows: President, W. O. Knight, of Garnett; first vice-president, Loren Harvey, Coffeyville; second vice-president, Ed. Plummer, Seneca; secretary, K. D. Doyle, Wamego; treasurer, Geo. T. Mohrbacker, Marysville. The latter two were re-elected, Mohrbacker by acclamation, while Mr. Doyle was opposed for the secretaryship by J. N. Wall, of Kansas City, Kan. Ed. Carby, Solomon; T. E. Skinner, Osborne, and W. P. Condray, Manhattan, were elected to membership on the executive committee.

Indiana Mayors' Association.

The committee appointed to arrange a time and place of meeting for the Indiana Mayors' Association has decided that the meeting shall be held in Muncie the first week in October. The committee was appointed by Mayor Bell, who is president of the association, and consists of J. H. Mellett, mayor of Anderson; J. Leo Watkins, mayor of Newcastle; Thomas Bauer, mayor of Lafayette; John W. McCarthy, mayor of Washington, and Dr. E. C. Loehr, mayor of Noblesville.

PERSONALS

Adair, Charles, has been appointed chairman of the water and light board of Harriman, Tex.

Burnett, Henry L., has resigned as acting manager of the Chicopee, Mass., electric light plant.

Collins, Alex, superintendent of water at Niagara Falls, Ont., has resigned.

Mayor William J. Dunn of Chicopee, Mass., appointed three electric light commissioners, Luke C. Meehan, an electrician; Ulysses H. Roe, chief engineer of the Spaulding plant, and Charles W. Embury.

Glasgow, L. I., has been made sanitary officer of Winston-Salem, N. C.

Hall, John, has been appointed health officer of East Orange, N. J.

Holsinger, S. D., has been elected for another term of two years as city manager of Staunton, Va.

Hurley, Patrick J., has been appointed chief of the Holyoke, Mass., fire department.

Newell, W. H., has been re-elected mayor of New Smyrna, Fla.

Ormsby, Robert, has been appointed chief engineer of the Bath, Me., Electric and Gas Light Co.

Ulrich, Edmund B., has been re-elected city engineer of Reading, Pa., for two years.

Winsor, F. E., has been appointed by the Providence, R. I., water board as chief engineer in charge of the Scituate water supply. Mr. Winsor has been division and department engineer on the Catskill water supply since 1910.

Following officials have been elected:

Rockwood, Tenn.—T. L. Bowers, mayor; aldermen, R. A. Barnard, A. H. Doescher, C. F. Farmer, S. D. Odam and J. M. Sivils.

McCole, S. C.—Wade H. Fletcher, mayor; aldermen, H. T. McLaurin, M. Inabinet, L. M. Morrison, Robert Chapman, Felix Stanton and C. C. Stokes.

Harriman, Tenn.—W. C. Anderson, mayor; aldermen, J. L. Forrister, H. T. Mitchell, T. O. Cook, Samuel Atkins and E. C. Parrish.

Wilmington, Del.—William G. Cox, water commissioner; William P. White, city auditor.

Elizabeth City, N. C.—John Betts, re-elected street commissioner; J. B. Thomas re-elected chief of police.

NEW APPLIANCES

Describing New Machinery, Apparatus, Materials and Methods and Recent Interesting Installations.

A NEW WATSON TRUCK.

Front Drive and Bottom Dump.

A new Watson dump truck is being made which is claimed to overcome the difficulties of former dump truck operation. The new truck, which has a capacity of five tons, is so designed that instead of carrying most of its load on the rear tires, 90 per cent. in the case of some trucks, it carries only 66 per cent. on the rear. Instead of rubber tires, the rear wheels have steel tires. These may be used because the rear wheels have only to carry load and have no pushing to do—the drive being front. This saves the great expense and trouble of replacing burnt-up rear tires. Skidding is reduced considerably.

The use of rear drive has prevented the utilizing of the bottom dump principle in auto trucks—and the cheapest and simplest dumping method could therefore not be taken advantage of. In the Watson truck now, in which there is no driving mechanism to go to the rear wheels, the dumping is through the bottom.

The engine of the truck is 40 h. p. and it is claimed that the Watson truck has taken a pay load of 11,500 pounds up hill over a mile long, part on a very steep grade, at a 12-mile an hour clip. There is a service brake acting on all four wheels and the emergency brake acts on the rear wheels.

The accompanying illustration shows this new development in efficient dump truck operation. The truck is made by the Watson Wagon Co., Canastota, N. Y.

"IDEAL" WATER FILTER VALVE.

Non-Clogging and Adaptable to All Pressures.

Hamill's "Ideal" water filter valve consists of a high hexagonal base and

a wide separable deflecting top plate. The detachable plate makes the valve easy to clean without removal from the base plate, manifold or lateral pipes of the filter. As strainers or valves are frequently imbedded in cement, this means a saving of time and material. The separable plate prevents the possibility of sealing the water passage when cement is used.

The base, being hexagonal, allows the free application of the wrench without injury to the plate. The height of the base permits of an unusual depth of cement being used to cover the manifold and lateral pipes, thus affording additional protection.

The flanged design causes it to force the water in a downward direction, clearing the bottom of the filter. Channeling or misplacement of the relative positions of the gravel and sand medium is avoided. The extended plate prevents the gravel from sealing or interfering with the operation of the valve, a constantly open outlet and inlet being maintained while filtering or cleaning. The broad distribution of water when cleaning the filter is calculated to reach the entire bed, thoroughly removing all held matter.

Clogging and disintegration are therefore prevented. The valve is designed to be adaptable to all pressures. There being no rivets or screws to produce rigidity, the valve is thus free to "breathe" in cleaning, thus helping its freeing from contamination.

The comparatively low cost and

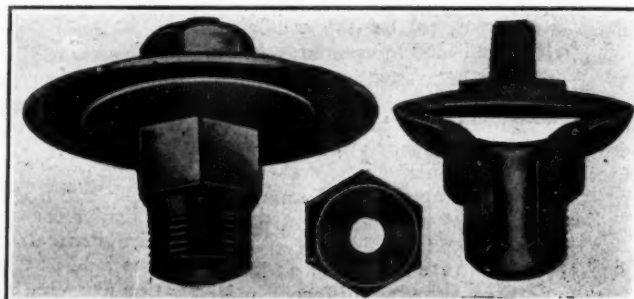
freedom from the need of constant repairs are claimed to make the valve well suited for large filtration areas.

The "Ideal" valve is made by Alexander Hamill, 501 Phoenix Bldg., Baltimore, Md.

TESTER AND COUPLING YOKE.

METER TESTER.

The Clark water meter tester is a complete equipment for meter testing consisting of a Fairbanks Standard Scale with a special meter tester beam and percentage bar, a 100-gallon galvanized iron tank fitted with a quick outlet valve, together with a tester table for holding any required number

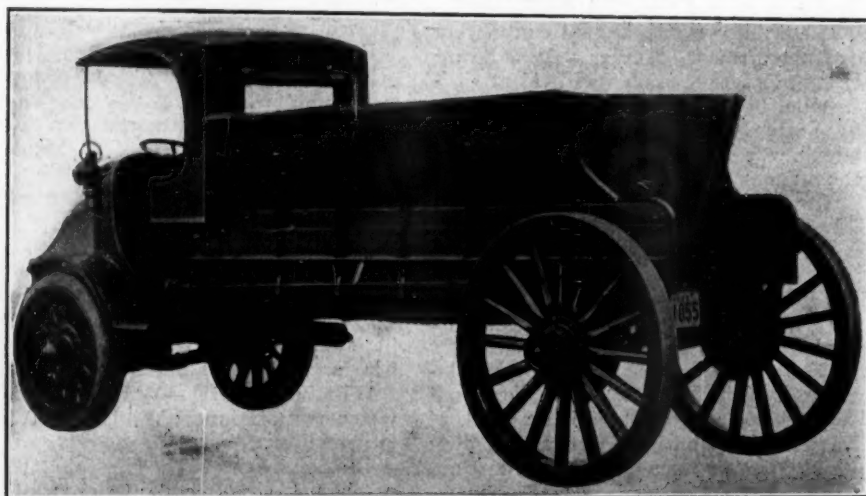


"IDEAL" FILTER VALVE.

of meters of any sizes specified. The tester is made in nine standard models for various combinations in addition to special constructions to fit any conditions. The large tester is for meters up to the largest sizes. The tester is claimed to be able to test any number of meters up to six in almost the same time as is taken to test one.

The tester is provided with accurate self-cleaning valves through which 1/32, 1/16 and 1/8 inch flows may be obtained. The self-cleaning feature prevents foreign matter from lodging in the valve and obstructing the waterway as sometimes occurs where orifice valves are used. The slow opening inlet valve is designed to eliminate water hammer and undue strains on the meter. The quick opening valve on the outlet side of the meters enables the flow to be controlled just as in actual service, giving absolute control over tests at all times. Gauges for accurately determining pressures at both ends, indicating loss of head due to friction, are provided.

The scale platform and base set flat on the floor and there are no rollers to affect stability. The rectangular construction economizes in floor space. The design and fine finish give the apparatus a neat appearance. The price is very attractive, ranging from \$38 up.



NEW WATSON AUTO DUMPING WAGON.

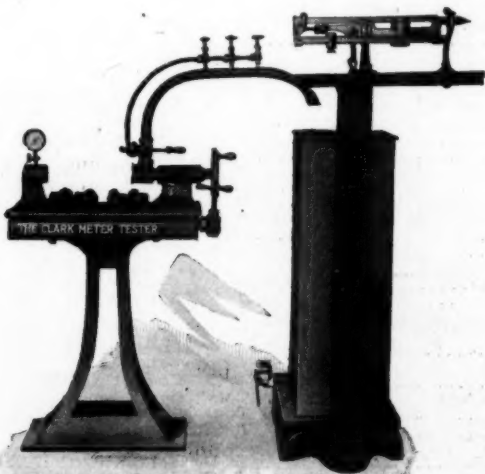
METER COUPLING YOKE.

The Clark meter coupling yoke is made of cast iron and brass. Connections to pipes are made without the use of union or right and left fittings. Meter and riser pipes are held rigid, and contact with walls of the box and consequent freezing are avoided. Pipes and meter are relieved of strains and expansion and contraction of lines is allowed for. There is a ready and easy sliding adjustment for taking care of meters of different lengths. The lock shield adjusting screw construction, requiring a special socket key to operate, eliminates the necessity of sealing the meter, although if a wire seal is desired in connection with the screws at the top of the meter the same line can be readily extended around any part of the yoke and a single seal used for the entire installation.

The yoke is designed to hold meters of any make in $\frac{3}{8}$, $\frac{1}{2}$ and 1-inch sizes and is also made in a special size of $\frac{3}{8}$ -inch to accommodate meters with $\frac{3}{4}$ -inch spuds. Stop cocks may be used inside of the meter box in connection with the coupling yoke, if desired. To install, the pipe is cut in two once and the ends are bent in opposite directions, gap being spaced about the length of the meter. The ends of the pipe are threaded, the ells are screwed on and risers extended. The two parts of the coupling yoke are then separated. One is screwed on each riser and the brass slide section is inserted into the yoke section and the yoke sets crosswise of line of service at an angle of 90 degrees.

The Clark yoke is held to be particularly well adapted to service in the South, where the meter is placed on a line with the pipe. Instead of risers, street ells may be connected to the service pipe and screwed into the coupling yoke and parts assembled. Basement installations are made with yoke furnished with tappings in top on one end for outlet side of house supply.

The tester and the yoke, which are shown in the accompanying illustrations, are made by the H. W. Clark Company, Mattoon, Ill.



CLARK METER TESTER.

INDUSTRIAL NEWS

Cast Iron Pipe.—Chicago—Little business occurred last week and the only letting of importance, that for 2,300 tons at Covington, Ky., has been postponed. Quotations: 4-inch, \$26; 6 to 12-inch, \$24; 16-inch and up, \$23.50; Class A, \$1 extra. Birmingham—Pipe makers have advanced quotations 50 cents per ton, with a tendency to ask still more for some sizes. The volume of orders, while not consisting of large lots, is satisfactory. The output is about 75 per cent and the pipe is moving out as manufactured. Quotations: 4-inch, \$20.50; 6-inch and up, \$18.50. San Francisco—The Spring Valley Water Co. is placing orders for several hundred tons of small pipe. Phoenix, Ariz., has opened bids for 400 tons. There is little other municipal business in immediate prospect. Following a recent reduction in freight rates, quotations at California terminals show some reduction. Quotations: 6-inch, \$29; 4-inch, \$31. New York—In addition to the public lettings already noted may be mentioned 800 tons of 6, 8 and 12-inch pipe, bids on which were received by Albany. The letting for the Borough of Totowa, Passaic County, N. J., involved 1,370 tons of 4 to 10-inch pipe and 30 tons of special castings. Quotations: 6-inch, Class B and heavier, \$22.50 to \$23; Class A, \$23.50 to \$24.

Lead.—Lead is weaker and uncertain. Quotations: New York, \$5.65; St. Louis, \$5.50.

The Burd High Compression Ring Co., Rockford, Ill., is beginning the installation of machinery in an additional new factory building containing 30,000 square feet of floor space. This has been found necessary to enable it to make deliveries on its large contracts and to start work on business that has been waiting for this factory increase.

The Buffalo Steam Roller Co., Buffalo, N. Y., announces the promotion of Mr. George P. White to the management of its Philadelphia office. Mr. White has been connected with the company for a number of years. The location of the Philadelphia office in the Bulletin Building has been changed to the fourth floor, room 404.

TRADE LITERATURE.

The Watson Wagon Co., Canastota, N. Y., has just issued a new and attractive catalog of their dumping wagons. All types are illustrated and described with full specifications. Among the well-known wagons shown are the $1\frac{1}{2}$ and 2-yard grading wagons and wagons for asphalt, ashes and street cleaning. The Watson trailer is also described.

The United States Steel Corporation is issuing a pamphlet describing the exhibits of the corporation and its subsidiaries in the Palace of Mines and Metallurgy at the Panama-Pacific International Exposition. The subsidiaries include the various steel companies, the American Bridge Co., the National Tube Co. and the Universal Portland Cement Co. The space occupied by the exhibit is 12,000 feet, second only in area to the government's display. The exhibits showed not only the advancement in various processes of manufacture, but also the advanced activities and interest of the corporation in the betterment of the working conditions surrounding its employees. The pamphlet describes all the exhibits in detail, making a very interesting story.



CLARK COUPLING YOKE.

ADVANCE CONTRACT NEWS

ADVANCED INFORMATION BIDS ASKED FOR

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we cannot guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also correction of any errors discovered.

CONTRACTS AWARDED ITEMIZED PRICES

BIDS ASKED FOR

| STATE | CITY | REC'D UNTIL | NATURE OF WORK | ADDRESS INQUIRIES TO |
|-------------------------|------------------|---------------------|---|--|
| STREET AND ROADS | | | | |
| Ia. | Spencer | July 24 | Laying 50,000 yds. first-class pavement | E. O'Keefe, City Engr. |
| Fla. | Sarasota | July 24 | Pav. with asphalt, asphaltic conc. or brick | F. P. Wright, Comr. P. W. |
| Wis. | Racine | 10 a.m., July 24 | Pav., putting in manholes & catch basins & constructing cement sidewalks | P. H. Connolly, Ch. Bd. P. W. |
| Ia. | Sioux City | July 24 | Paving with concrete, cost \$31,600 | T. H. Johnson, City Engr. |
| Pa. | Harrisburg | July 24 | Constructing driveway in park | Park Commissioner |
| Ia. | Boone | 3 p.m., July 24 | 3,600 sq. ft. cement walks | R. T. Duckworth, Secy. |
| O. | Tiffin | July 25 | 25,800 sq. yds. brick and crushed stone on concrete base, 15,600 ft. sandstone or concrete curb, excavation, etc., for four streets | O. J. Oberlander, City Engr. |
| Ind. | Portland | July 26 | Improving streets | City Clerk |
| N. Y. | Albany | 1 p.m., July 26 | 5.3 miles state highway | Edwin Duffey, State Hwy. Comr. |
| Cal. | Sacramento | July 26 | 37.4 miles state highways (asphalt and concrete) | State Hwy. Commission |
| Neb. | University Place | July 26 | 16,100 yds. excavation and 8,000 ft. curb; cost \$38,520 | E. C. Hurd, Engr., Lincoln |
| W. Va. | Moundsville | July 26 | Paving with brick, Tarvia or Warrenite and constructing concrete curb | O. B. Bonar, Clerk. |
| Minn. | Duluth | 11 a.m., July 26 | Street improvement | J. A. Farrell, Comr. P. W. |
| O. | Bowling Green | Noon, July 26 | Grading, draining, paving, curbing and improving | W. A. Mariner, Service Dir. |
| O. | Younstown | 1.30 p.m., July 26 | 14,835 ft. waterbound slag macadam road | Frank Agnew, Sec. Rd. Comr. |
| Mo. | Carthage | 8 p.m., July 26 | Grading and macadamizing streets | W. H. Rogers, St. Comr. |
| Ia. | Burlington | July 26 | Grading, tilling and laying one mile of concrete paving | F. W. Parrott, Co. Aud. |
| O. | Jefferson | Noon, July 26 | Grad., pav. with asphalt mac. & constructing curbs | W. B. Culp, Vil. Clk. |
| Pa. | Jewett | July 26 | 5,857 sq. yds. vit. brick paving | A. O. Lantz, Town Clerk. |
| Minn. | St. Paul | 10.30 a.m., July 26 | Curbing, grading and improving streets | August Hohenstein, Pur. Agt. |
| Ia. | Mansfield | July 26 | Constructing brick pavement | E. E. Swope, City Engr. |
| N. J. | East Orange | 8 p.m., July 26 | Laying mac. and Belgium blocks and constructing curbs | L. E. Rowley, City Clk. |
| N. Y. | Endicott | 8 p.m., July 27 | Paving 5 streets with brick, bitulithic or other material | G. H. Nichols, Vil. Pres. |
| Conn. | Meriden | July 27 | Wood block and reinforced concrete pavement | Board of Pub. Works. |
| Wis. | Green Bay | 10 a.m., July 27 | Grading and paving with reinforced concrete | City Clerk |
| Cal. | Stockton | 10 a.m., July 27 | Paving several streets with asphalt concrete | G. W. Pulich, City Clerk |
| Ia. | New Orleans | July 27 | Constructing and surfacing with shell 11 miles of road | City Engineer |
| Del. | Wilmington | 10 a.m., July 27 | Paving bricks, sand, gravel and other paving supplies | L. V. Christy, Sec. Bd. Dir. |
| Ill. | South Dixon | 1 p.m., July 27 | Macadamizing roads | I. W. Cortwright, Town Clk. |
| Wis. | Spencer | 8 p.m., July 27 | Laying 70,000 yds. of pavement | E. O'Keefe, City Engr. |
| Wis. | Janesville | July 27 | 6,444 yds. asphalt paving, 5,963 yds. brick paving and 195 yds. asphalt resurfacing | J. A. Fathers, Chr. B. P. W. |
| Wash. | Seattle | July 27 | Paving with brick and crushed stone, cost \$100,000 | F. W. Allen, Dep. Co. Engr. |
| Pa. | Connellsville | Noon, July 27 | Const. 2,800 ft. brick rd. & furn. 345,000 pav. blocks | Harry Kissinger, Co. Controll. |
| Ala. | Tuscaloosa | July 27 | Grading, draining and surfacing with clay gravel | W. S. Keller, State Hwy. Engr., Montgomery |
| Ala. | Cloverdale | July 27 | Constructing concrete curbs and gutters | W. R. McDade, Town Clk. |
| Ala. | Greensboro | July 27 | Grading, draining and surfacing with gravel | County Commissioners |
| Ia. | New Orleans | 11 a.m., July 27 | Constructing highways | A. G. Ricks, Comr. Pub. Fin. |
| N. J. | Newark | July 28 | Constructing streets and roads | Bd. of St. & Water Comrs. |
| O. | Cuyahoga Falls | Noon, July 28 | Grading, draining, curbing with stone and paving with brick or stone blocks | W. F. Williston, Vil. Clk. |
| Tenn. | Knoxville | Noon, July 28 | Paving 22 roads, about 80 miles | Knox Co. Road Commission |
| N. J. | Passaic | 2 p.m., July 28 | Remacadamizing and installing covered gutter | F. G. Sloan, Chr. Rd. Com. |
| N. J. | Trenton | 2.30 p.m., July 28 | Paving with bituminous concrete and granite block on seven streets | Frank Thompson, City Clk. |
| N. Y. | Brooklyn | 11 a.m., July 28 | Regulating and repaving with granite blocks; 50,000 asphalt blocks, 50,000 wood blocks and 3,000 cu. yds. broken stone and screenings | L. H. Pounds, Boro Pres. |
| Tex. | McKinney | July 29 | 2,300 yds. asphalt pavement, 7,000 yds. brick pavement and 1,700 ft. curb and gutter | Chas. Shultz, City Engr. |
| O. | Lima | Noon, July 29 | 43,136 sq. yds. concrete paving | H. J. Lawlor, Co. Aud. |
| Va. | Norfolk | 1 p.m., July 29 | Paving several streets | Board of Control. |
| Conn. | Meriden | 8 p.m., July 29 | Paving with wood block, vitrified brick or reinforced concrete | Board of Public Works. |
| Ind. | Muncie | Noon, July 29 | Const. curbs, walks and pavements on school ground | V. W. Jones, Sec. Bd. Trustees |
| N. Y. | New York | 2 p.m., July 29 | Preparing asphalt pavements on Harlem River Bridge | F. J. H. Kracke, Comr. Bridges |
| Ind. | Indianapolis | 10 a.m., July 30 | Constructing county line road | W. T. Patten, Co. Aud. |
| N. D. | Bowbells | 2 p.m., July 30 | Constructing grade | G. K. Melby, Co. Aud. |
| O. | Niles | Noon, July 30 | Grading, draining, curbing and paving streets | J. N. Cowdery, Dir. P. S. |
| N. D. | Glen Ullin | July 31 | Constructing street crossings | L. T. Nelson, City Aud. |
| N. Y. | Peekskill | 2 p.m., July 31 | Widening and grading roadway | O. E. Lent, Town Supt. |
| N. Y. | Schenectady | 2.30 p.m., July 31 | 30,000 yds. asph. pave., 300 yds. conc. pave. and 30,000 yds. of sidewalk | Bd. of Contract & Supply |
| Tex. | Caldwell | 2 p.m., July 31 | Road improvement | County Comms. |
| O. | Delaware | 10 a.m., July 31 | Grading and macadamizing 4.5 miles road | F. C. Higley, Co. Surv. |
| D. C. | Washington | July 31 | Replacing defective stones in walks | W. W. Harts, Col. U. S. A. |
| Neb. | Grand Island | 11 a.m., July 31 | Constructing concrete road | G. E. Neuman, Co. Clk. |
| Ky. | Louisville | Aug. 1 | 3,280 yds. vit. blk., 23,000 yds. sheet asphalt, 9,000 yds. excavation and 13,500 ft. stone curbing | D. R. Lyman, City Engr. |
| Fla. | Jacksonville | Aug. 2 | 1,875 yds. asphaltic concrete | S. C. Harrison, Jr., Chr. B. W. Com. |
| Kan. | Fort Scott | Aug. 2 | Three miles macadam road | N. J. Rose, Co. Clk. |
| W. Va. | Clarksburg | 7 p.m., Aug. 2 | Grading, curbing and paving with brick 7 streets | Common Council. |
| Ind. | Greensburg | 1 p.m., Aug. 2 | Constructing road | County Comms. |
| Ind. | Albion | 2 p.m., Aug. 2 | Constructing county line road | County Comms. |
| Ind. | Versailles | 1 p.m., Aug. 2 | Constructing crushed stone road | County Comms. |
| Ind. | Rising Sun | 1 p.m., Aug. 2 | Grading, paving and improving roads | J. D. Hemphill, Co. Aud. |
| Minn. | Morris | 2.30 p.m., Aug. 2 | Grading and completing road | T. G. Klingler, Chr. Supvrs. |

BIDS ASKED FOR

| STATE | CITY | REC'D UNTIL | NATURE OF WORK | ADDRESS INQUIRIES TO |
|----------|-------------------|------------------|--|--|
| Wash., | Seattle | 10 a.m., Aug. | 2..Constructing permanent highways | Byron Phelps, Clk. Co. Comrs. |
| Wash., | Issaquah | Aug. | 2..Laying crushed rock on eight miles of highways, cost \$30,000 | Byron Phelps, Clk. Co. Comrs., Seattle. |
| Neb., | College View | 5 p.m., Aug. | 2.. Grad. curb and laying asphalt conc. or brick | J. G. Hornung, Vil. Clk. |
| Ind., | Franklin | 2 p.m., Aug. | 2.. Grading, paving and improving roads—4 jobs | H. L. Knox, Co. Aud. |
| Ind., | Greenfield | 10 a.m., Aug. | 2.. Grading, paving and improving roads | Lawrence Wood, Co. Aud. |
| Ind., | Fowler | 1 p.m., Aug. | 2.. Grading, paving and improving roads | Warren Mankey, Co. Aud. |
| Ind., | Jasper | 2 p.m., Aug. | 2.. Grading, paving and improving roads | Jacob Seng, Co. Aud. |
| Ind., | Tipton | 10 a.m., Aug. | 2.. Grading, paving and improving roads | Oscar Vanness, Co. Aud. |
| Ind., | Winamac | Aug. | 3.. Grading, paving and improving roads | W. E. Munchenburg, Co. Aud. |
| Mont., | Laurel | 8 p.m., Aug. | 3.. 14,500 yds. bitu. pave., 3,070 ft. gutters & 4,800 yds. of excavation | O. H. Bundy, City Clk. County Commissioners |
| Fla., | Kissimmee | Aug. | 3.. Paving county roads with brick | L. S. Core, Co. Aud. |
| Ind., | Washington | 2 p.m., Aug. | 3.. Grading, paving and improving roads | B. B. Engle, Co. Aud. |
| Ind., | Crawfordsville | 10 a.m., Aug. | 3.. Grading, paving and improving roads | C. A. Blachly, Co. Aud. |
| Ind., | Valparaiso | 2 p.m., Aug. | 3.. Grading, paving and improving roads | C. E. Tillson, Co. Aud. |
| Ind., | Randolph | 10 a.m., Aug. | 3.. Grading, paving and improving roads | T. H. Baltzell, Co. Aud. |
| Ind., | Decatur | 10 a.m., Aug. | 3.. Resurfacing with bituminous macadam 1.7 miles | State Hwy. Dept., Albany |
| N. Y., | Binghamton | Aug. | 3.. Constructing rock or concrete road | County Commissioners |
| Ind., | Boonville | 10 a.m., Aug. | 3.. Constructing three roads | County Commissioners |
| Ind., | Noblesville | 10 a.m., Aug. | 3.. Road construction | County Commissioners |
| Ind., | Winchester | 10 a.m., Aug. | 3.. Constructing gravel, concrete or brick road | County Commissioners |
| Ind., | Goshen | 1 p.m., Aug. | 3.. Paving with brick or asphalt block, about 800 yds. | Franklin Marsh, City Engr. |
| N. J., | Rahway | 8 p.m., Aug. | 3.. Paving on concrete base 15 miles of road | R. S. Douthat, Clk. Co. Comrs. |
| W. Va., | Huntington | 1 p.m., Aug. | 3.. Paving streets | A. G. Ricks, Comr. Pub. Fin. |
| La., | New Orleans | 11 a.m., Aug. | 4.. 17,000 yds. bitulithic or asphaltic concrete, 8,100 ft. curbing and 2,800 ft. of gutters | J. J. Armstrong, City Engr. |
| Mont., | Butte | Aug. | 4.. Grading and macadamizing 0.56 mile of road | F. C. Higley, Engr. |
| O., | Delaware | 10 a.m., Aug. | 4.. Constructing cement sidewalks, grading and constructing curb and gutter | Karl A. Schied, City Rec. Bd. St. & Water Comrs. |
| Utah, | Salt Lake City | 10 a.m., Aug. | 5.. Paving with asphalt, granite and asphalt block | C. A. Splith, City Clk. |
| N. J., | Newark | Aug. | 6.. Improving and macadamizing road | C. O. Higgins, Co. Aud. |
| Mont., | Bozeman | 5 p.m., Aug. | 6.. 26 miles gravel road, cost \$160,000 | County Comrs. |
| O., | Mount Gilead | 11 a.m., Aug. | 7.. 6,226 yds. brick paving, 2,660 ft. concrete combined curb and gutter and 3,250 yds. excavation | P. H. Connolly, City Engr. |
| Ark., | Russellville | Aug. | 7.. 6,000 yds. bitulithic, asphaltic or wood block paving | J. J. Armstrong, City Engr. |
| Wis., | Racine | 10 a.m., Aug. | 9.. Grading, paving and improving roads | F. K. McElhenny, Co. Aud. |
| Mont., | Butte | Aug. | 9.. Grading and sodding—2 jobs | Clk. Bd. Education |
| Ind., | Peru | Noon, Aug. | 10.. 118,000 yds. first-class pavement | City Engineer |
| O., | Cincinnati | Noon, Aug. | 10.. Laying cement sidewalks | District Commissioner |
| Del., | Wilmington | 4 p.m., Aug. | 10.. 26,000 yds. brick, asphalt, asphalt block, wood block or treated macadam | A. F. Unckrich, Dir. P. S. |
| O., | Washington | 2 p.m., Aug. | 10.. Street paving | W. J. Hardee, City Engr. |
| O., | Gallion | noon, Aug. | 12.. Constructing macadam road | C. Newhouse, City Clk. |
| La., | New Orleans | Aug. | 14.. Pav. with brick & asphaltic conc. to cost \$70,000 | Arthur Edgren, Co. Engr. |
| O., | Marble Cliff | Noon, Aug. | 14.. Road construction | County Commissioners |
| Neb., | Lincoln | Aug. | 16.. Grading and constructing sidewalks | H. H. Canfield, Vil. Clk. |
| Ky., | Louisville | Aug. | 16.. Grading, draining and paving with concrete | Clarence Sedgwick, Co. Aud. |
| O., | Cleveland Heights | Noon, Aug. | 17.. Asphaltic concrete paving, to cost \$10,000 | J. W. Weatherford, City Engr. |
| Ind., | South Bend | 11 a.m., Aug. | 18.. 4.6 miles of concrete road | Clarence Sedgwick, Co. Aud. |
| Tenn., | Memphis | Aug. | 25.. Laying sidewalks and constructing curbs and gutters | W. H. Carpenter, Jr., Vil. Clk. |
| Ind., | South Bend | Aug. | 30.. Concrete paving, cost \$15,410.68 | J. B. Hunter, Pres. B. P. W. |
| N. Y., | White Plains | 8 p.m., Aug. | | |
| Colo., | Denver | 11 a.m., Aug. | | |
| SEWERAGE | | | | |
| Ind., | Markle | 1 p.m., July | 24.. Constructing sewer system, estimated cost \$13,098 | Thos. Ruggles, Engr., Huntington. |
| Ia., | Sioux City | 10 a.m., July | 24.. Constructing sanitary and storm sewers | T. H. Johnson, City Engr. |
| Wis., | Racine | 10 a.m., July | 24.. Sewers, manholes and catch basins | P. H. Connolly, Ch. Bd. P. W. |
| O., | Cincinnati | Noon, July | 24.. Sanitary sewage disposal plant near Wyoming, Ohio | E. Von Bargaen, City Pur. Agt. |
| O., | Bowling Green | Noon, July | 26.. Subdrain | W. A. Mariner, Service Dir. |
| Wis., | Appleton | 9 a.m., July | 26.. Sewer construction | E. L. Williams, City Clk. |
| Md., | Ocean City | July | 26.. Constructing sewage pumping station, clarification plant and intercepting and branch sewers | J. M. Munford, Sec. Council. |
| N. J., | Maywood | July | 26.. Constructing sanitary sewer system | Chas. Stass, Clk. Council. |
| O., | Springfield | Noon, July | 26.. Constructing sewers | C. E. Ashburner, City Mgr. |
| Minn., | St. Paul | 10:30 a.m., July | 26.. Constructing storm water and sanitary sewers | August Hohenstein, Pur. Agt. |
| Mont., | Wilbax | July | 26.. Constructing sewer system to cost \$13,000 | C. H. Green Co., Spokane, Wash. |
| Minn., | Sandstone | 8 p.m., July | 26.. Sewer system, including 2,748 ft. 10-in., 3,443 ft. of 8-in., 2,835 ft. 6-in. pipe, 34 manholes, etc. | Chris Rudisuhle, Vil. Rec. City Clerk. |
| Minn., | Little Falls | July | 26.. Sewer construction | August Hohenstein, Pur. Agt. |
| Minn., | St. Paul | 10:30 a.m., July | 26.. Constructing storm water and sanitary sewers | Z. A. Van Houten, City Clk. |
| N. J., | Passaic | 10:30 a.m., July | 26.. Constructing storm water sewer | E. F. Murphy, Comr. P. W. |
| Mass., | Boston | Noon, July | 26.. Constructing pipe sewers and drains | D. C. Morgan, Vil. Clk. |
| N. Y., | Endicott | 8 p.m., July | 27.. Constructing storm sewer | P. S. Johnson, Sec. P. S. |
| O., | Cincinnati | July | 27.. Constructing sewers in several streets | L. Fendelsen, Ch. Sewer Com. |
| Wis., | Green Bay | 10 a.m., July | 27.. 10-in. vit. sewer | E. J. Overland, City Clk. |
| Minn., | Thief R. Falls | 8 p.m., July | 27.. 1,330 ft. 8 to 12-in. sewers | W. R. McDade, Town Clk. |
| Ala., | Cloverdale | July | 27.. Constructing sanitary and storm sewers | W. D. Wallace, Co. Aud. |
| Wash., | Bellingham | 10 a.m., July | 27.. Drainage ditch construction | W. F. Williston, Vil. Clk. |
| O., | Cuyahoga Falls | Noon, July | 28.. Constructing sanitary sewers and laterals | H. B. Fernside, Chr. Commra. |
| N. Y., | Niskayuna | 8 p.m., July | 28.. Constructing 1,000 ft. sanitary sewers | Robt. Guseman, Twp. Trustee. |
| Ind., | Hartford City | 10 a.m., July | 28.. Cleaning and repairing drainage ditch | J. H. Sell, Twp. Trustee. |
| Ind., | Bippus | 2 p.m., July | 28.. Cleaning and repairing two ditches | A. J. Reusing, Vil. Clk. |
| O., | Cheviot | July | 28.. Constructing trunk drain | M. E. Connolly, Pres. Boro Queens |
| N. Y., | New York | 11 a.m., July | 28.. Constructing sewers in several streets | M. R. Sherard, Ch. Engr. |
| N. J., | Newark | July | 29.. Sewer construction | Geo. W. Brown, Twp. Trustee. |
| Ind., | Hartford City | 1 p.m., July | 29.. Cleaning and repairing three ditches | Robt. Guseman, Twp. Trustee. |
| Ind., | Hartford City | 10 a.m., July | 29.. Cleaning and repairing ditch | W. E. Price, Engineer. |
| Ill., | Urbana | 10 a.m., July | 29.. Two bulkheads, one retaining wall and tile drains | Robt. Guseman, Twp. Trustee. |
| Ind., | Hartford City | 10 a.m., July | 30.. Cleaning and repairing drainage ditch | Philip Foadick, Dir. P. S. |
| O., | Cincinnati | Noon, July | 30.. Construction of storm sewers | Louis Meyer, Drainage Comr. |
| Ind., | Boonville | 3 p.m., July | 31.. Constructing drainage ditch | A. G. Wheeler, Drainage Comr. |
| Ind., | Princeton | 3 p.m., July | 31.. Constructing drainage ditch | R. S. Newsom, Chr., clo Co. Cls. |
| Tex., | Caldwell | 2:30 p.m., July | 31.. 360,000 cu. yds. earthwork in levees and ditches | Ben Havens, City Clk. |
| Ind., | Kokomo | 10 a.m., Aug. | 2.. Constructing sewers in several streets | City Clerk |
| Wis., | Beaver Dam | Aug. | 2.. Constructing sanitary sewer | Thos. Eastcott, City Aud. |
| S. D., | Mitchell | Aug. | 2.. 3 blocks of sewers | C. S. Hill, Engr., Palmetto. |
| Fla., | Parish | Aug. | 2.. Main canal and nine laterals | City Clk. |
| Ill., | Glencoe | 8 p.m., Aug. | 3.. Construction of sanitary sewer system | L. A. Washington, Com. P. W. |
| Ky., | Paducah | Aug. | 3.. Constructing outfall sewer | S. Q. Cannon, City Engr. |
| Utah, | Salt Lake City | Aug. | 4.. Constructing 23,000 ft. 30-in. to 78-in. sewer | P. W. Derr, Clk. Ct. House Com. |
| O., | Cincinnati | noon, Aug. | 5.. Constructing main and lateral sewers for Court House | |

BIDS ASKED FOR

| STATE | CITY | REC'D UNTIL | NATURE OF WORK | ADDRESS INQUIRIES TO |
|---------------------------|-----------------------|-------------|---|---|
| Ind., Richmond |10 a.m., Aug. | 5.. | Constructing drainage ditch | Levi Peacock, Drainage Comr. |
| N. C. Warrenton |Aug. | 10.. | Constructing sewer system | G. C. White, Engr., Charlotte. |
| Pa., Lebanon |5 p.m., Aug. | 18.. | Constructing sewage disposal plant complete..... | T. R. Crowell, City Engr. |
| N. J., Newark |Aug. | 31.. | Superstructure of Meadows pumping station..... | Passaic Valley Sew. Comm. |
| WATER SUPPLY | | | | |
| Pa., Gallitzien |July | 24.. | Constructing storage reservoir..... | H. F. Conrad, Boro. Sec. |
| Ill., Chicago |July | 24.. | Motor driven centrifugal pump with accessories..... | W. R. Moorhouse, Comr. P. W. |
| Ill., Oglesby |8 p.m., July | 25.. | Constructing pump house and elevated water tank and furnishing pumping machinery..... | John Corgiat, City Clk. |
| Ont., Oakville |8 p.m., July | 26.. | Installing electrically operated turbine pump with capacity of 600 gals., against 300-ft. head..... | C. G. Marlatt, Chr. W. & L. Comm. |
| Mont., Wibaux |July | 26.. | Constructing water works to cost \$27,000..... | C. H. Green, Spokane, Wash. |
| S. D., Sioux Falls |July | 26.. | 1,200,000-gal. covered concrete reservoir, 350,000-gal. elevated tank and four alternative installations of pumping machinery | Walter C. Leyse, City Aud. |
| N. J., Woodbury |8 p.m., July | 27.. | Making additions to pumping station and furnishing boilers and pumping machinery | Arthur Starr, City Clk. |
| O., Columbus |Noon, July | 27.. | Water tube boilers, piping, grease extractor and mechanical stoker for pumping station..... | Geo. A. Borden, Dir. P. S. |
| Ind., Van Buren |2 p.m., July | 27.. | Drilling 8 or 10-in. well..... | W. W. Mott, Town Clerk |
| Neb., Milligan |1 p.m., July | 27.. | Constructing water works system..... | E. Kotas, Vil. Clerk |
| Ill., Rockford |10 a.m., July | 27.. | Pumping equipment | Water Works Supt. |
| O., Cleveland |Noon, July | 28.. | Water tube boilers | A. R. Callow, Comr. Pur. & Sup. |
| Wis., Oconomowoc |1 p.m., July | 28.. | Furnishing water pipes and laying mains..... | City Clerk |
| Ill., Monticello |10 a.m., July | 28.. | Improving water works..... | City Clerk |
| Minn., Lakefield |July | 28.. | Furnishing material and constructing improvements to water works and electric light plant..... | E. C. Anderson, Vil. Rec. |
| Ore., West Linn |2 p.m., July | 29.. | Water system and 2,000,000-gal. reservoir..... | West Linn Water Commission |
| Ky., Covington |10 a.m., July | 29.. | Pipe trenching and backfilling for 10,950 ft. 24-in. main..... | J. M. Howk, Comr. Pub. Prop. |
| Ill., Frankfort |7:30 p.m., July | 29.. | Constructing water tank and tower..... | Herman Scheer, Vil. Clk. |
| Wis., Ellsworth |July | 29.. | Constructing water works to cost \$7,500..... | C. B. Wood, Vil. Clerk. |
| Wash., Pateros |July | 30.. | Constructing water works system..... | W. H. Noble, Town Engr. |
| Ja., Ogden |8 p.m., July | 30.. | Const. water works extension, includ. 18,000 ft. of pipe..... | Daniel Sickler, Mayor |
| O., Wellington |Noon, July | 31.. | Improvements to water system..... | E. E. Goodrich, Clk. P. Affrs. |
| Conn., Hartford |Aug. | 2.. | Constructing compensating reservoir..... | C. M. Saville, Ch. Engr. |
| Ont., Ottawa |Aug. | 3.. | Constructing overland pipe system to cost \$460,000..... | J. B. McRea, Engr., Ottawa. |
| Ill., Quincy |10 a.m., Aug. | 4.. | Constructing steam-driven pumping plant..... | J. H. Best, Ill. State Bk. |
| Ja., Kingsley |2 p.m., Aug. | 5.. | 100,000-gal. water supply tank..... | W. R. Payne, Town Clk. |
| O., Cambridge |Aug. | 5.. | 200 million gallon reservoir, filtration plant, new pumping station and nine miles pipe line | W. J. Sherman Co., Nasby Bldg., Toledo. |
| N. C., Warrenton |Aug. | 10.. | Constructing water works system..... | G. C. White, Engr., Charlotte. |
| Neb., Ord |Aug. | 13.. | Constructing water works..... | O. P. Conwell, City Clk. |
| O., Warrensville |Noon, Aug. | 16.. | Constructing 12-in. c.l. water mains..... | H. H. Canfield, Clk. |
| N. Y., Watervliet |Aug. | 16.. | Constructing waterworks system..... | Water Board. |
| LIGHTING AND POWER | | | | |
| Ill., Springfield |2 p.m., July | 25.. | Erecting two power houses | B. of Administration. |
| Mo., Webb City |July | 26.. | Lighting fixtures for postoffice..... | Supervising Architect, Wash. |
| Colo., Yuma |July | 28.. | Machinery for power plant in connection with water works extension | Chas. Crowley, Town Clk. |
| O., Cleveland |Noon, July | 29.. | Paper insulated lead covered cable; transformers..... | A. R. Callow, Comr. Pur. & Sup. |
| D. C., Washington |July | 30.. | Steam engine, generator & generator panel for Pittsburgh Bureau of Mines..... | Supervising Architect |
| Minn., Lakefield |July | 31.. | Addition to municipal electric light plant and installing new equipment..... | Village Recorder. |
| O., Cleveland |1 p.m., Aug. | 2.. | Boiler and heating plant for high school..... | F. G. Hogen, Dir. Schools. |
| Mich., Saginaw |Aug. | 9.. | Conduit, wiring system and lighting fixtures at Post Office | Supervising Architect, Washington. |
| Neb., Ord |Aug. | 13.. | Constructing electric light plant..... | O. P. Conwell, City Clk. |
| D. C., Washington |Aug. | 16.. | 12 electric towing locomotives..... | General Purchasing Officer, Panama Canal |
| Okl., Adamson |Sept. | 30.. | Electric light plant..... | Frank Mann, Engr |
| FIRE EQUIPMENT | | | | |
| N. Y., New York |10.30 a.m., July | 26.. | Furnishing 20 automobile runabouts; installing gasoline storage system in eleven fire houses | Robert Adamson, Fire Comr. |
| Ill., Chicago |11 a.m., July | 26.. | Constructing fire engine house..... | W. R. Moorhouse, Comr. P. W. |
| N. Y., Syracuse |1:30 p.m., July | 26.. | Fire engine house to cost \$35,000..... | R. D. Roney, Secy. Bd. C. & S. |
| Ind., Kokomo |10 a.m., July | 26.. | Six-cylinder runabout for fire chief..... | Ben Havens, City Clk. |
| O., Zanesville |July | 26.. | Two motor combinations, one motor triple combination and one 75-foot motor aerial..... | C. L. Culberson, Dir. Pub. S. |
| Cal., Stockton |10 a.m., July | 27.. | Constructing two fire engine houses..... | G. W. Pulich, City Clk. |
| O., Cleveland |Noon, July | 29.. | Second size steam fire engine with tractor..... | A. R. Callow, Comr. Pur. & Sup. |
| Mont., Great Falls |8 p.m., July | 29.. | 1,000 ft. 2 1/2-in. fire hose | W. H. Harrison, City Clk. |
| N. C., Wilmington |July | 31.. | 1,000 ft. 2 1/2-in. fire hose | Chas. Schnibben, Chief |
| Miss., Clarksdale |Aug. | 3.. | Motor triple combination..... | Fire Chief. |
| N. Y., Binghamton |4 p.m., Aug. | 4.. | Constructing steel practice tower..... | D. W. Foster, Clerk |
| Pa., Waynesboro |Aug. | 6.. | Motorizing fire department..... | City Clerk. |
| England, London |August | 11.. | Installing fire alarms at Rangoon..... | Ogilvy Gillanders & Co., 67 Cornhill, E. C. |
| BRIDGES | | | | |
| O., Newark |July | 24.. | 104-foot span steel bridge..... | J. W. Hursey, Co. Aud. |
| Ont., Moorfield |July | 24.. | 25-foot concrete beam bridge..... | G. H. Dickson. |
| Ill., Hinckley |noon, July | 24.. | Two reinforced concrete bridges to cost \$2,000..... | W. C. Miller, Supt. Highways. |
| Wis., Gordon |11 a.m., July | 24.. | Constructing steel and concrete bridge over Eau Claire river | Elmer Perry, Town Clk. |
| Ill., Bishop Hall |3 p.m., July | 24.. | Constructing reinforced concrete bridge..... | J. H. Reed, Co. Supt. Hwys., Cambridge. |
| Kan., Holton |July | 25.. | One 50, one 60 and one 70-foot span bridges..... | Wm. H. Webster, Co. Clerk. |
| Ore., Portland |Noon, July | 26.. | Constructing reinforced concrete viaduct and approaches, cost \$53,000..... | A. L. Barbour, City Auditor. |
| Ind., South Bend |11 a.m., July | 26.. | Constructing three concrete culverts | Clarence Sedgwick, Co. Aud. |
| Minn., Hazle Run |2 p.m., July | 27.. | Constructing 2 bridges..... | H. L. Jertson, Twp. Clk. |
| Mo., Bowling Green |July | 28.. | 180-ft. span steel bridge..... | C. M. Harris, Hwy. Engr. |
| O., Mansfield |10 a.m., July | 28.. | Constructing bridge | County Engineer |
| O., Cleveland |Noon, July | 29.. | Reinforced concrete floor for viaduct | A. R. Callow, Comr. Pur. & Sup. |
| Pa., Houtzdale |July | 29.. | 20-foot reinforced concrete bridge 60 feet wide..... | Chas. Dickey, Sec. Council. |
| O., Columbus |noon, July | 30.. | Constructing approaches to bridge; removing and erecting Third Avenue bridge | John Scott, Clk. Co. Comrs. |
| N. Y., Minetto |July | 31.. | Concrete steel arch bridge..... | E. A. Howard, Co. Hwy. Supt., Oswego. |

BIDS ASKED FOR

| STATE | CITY | REC'D UNTIL | NATURE OF WORK | ADDRESS INQUIRIES TO |
|---------------|-----------------|------------------|---|---|
| N. D. | Bonetrail | Aug. | 1. Bridge construction | V. E. Mantz, Clerk |
| Ill. | Paris | 2 p.m., Aug. | 2. Steel plate girder bridge | K. J. Barr, Co. Supt. Hwy. |
| Miss. | Sardis | Aug. | 2. Constructing 2 bridges and 1 trestle | R. W. Draper, Co. Clk. |
| Vt. | Montpelier | Aug. | 2. Bridge construction | City Clerk. |
| Pa. | Media | Aug. | 2. Constructing reinforced concrete bridge | O. L. Davis, Co. Controller. |
| Cal. | Los Angeles | Aug. | 2. Constructing pipe girder bridge | H. L. Lelande, Co. Clerk. |
| Minn. | Rice | 1 p.m., Aug. | 2. Constructing one bridge | John Welma, Town Clerk. |
| O. | Lebanon | 11 a.m., Aug. | 2. Floors for bridges | J. M. Mulford, Co. Aud. |
| O. | Carrollton | Aug. | 2. Rebuilding bridge | S. G. Shotwell, Pres. Bd. Comrs. |
| Ind. | Shelbyville | 10 a.m., Aug. | 3. Repairing four culverts and bridges and constructing two culverts | F. W. Fagel, Co. Aud. |
| N. J. | Rahway | 8 p.m., Aug. | 3. Concrete culvert | Franklin Marsh, City Engr. |
| Ind. | Frankfort | Aug. | 3. Constructing reinforced concrete bridge, cost \$3,500 | Edw. Spray, Co. Aud. |
| N. J. | Freehold | 11 a.m., Aug. | 4. Constructing Strauss bascule trunnion bridge | C. E. Close, Clk. of Board |
| Ind. | Crown Point | 1 p.m., Aug. | 5. Concrete encased girder bridge; Scherzer rolling lift bridge | Edward Simon, Co. Aud. |
| O. | Ashland | noon, Aug. | 6. Constructing and repairing seven bridges | B. Weltey, Clk. Co. Comrs. |
| Fla. | Clearwater | Aug. | 7. Constructing bridge two miles long | E. W. Parker, Curry Bldg., Tampa. |
| Conn. | Bridgeport | Noon, Aug. | 7. Const. 500 ft. reinforced conc. girder bridge | Bridge Commission |
| O. | Niles | Aug. | 9. Bridge construction | W. F. Harrington, Co. Aud. |
| O. | Sandusky | 1.30 p.m., Aug. | 9. Erection and completion of bridge | County Surveyor. |
| N. D. | Ft. Yates | 2 p.m., Aug. | 10. Two 36-ft. steel bridges | A. Colville, Co. Aud. |
| Ind. | Lebanon | Aug. | 15. Ten steel and concrete bridges | E. M. Clark, Co. Aud. |
| O. | Marietta | 1 p.m., Aug. | 17. Constructing concrete bridge | W. B. Alexander, Co. Aud. |
| MISCELLANEOUS | | | | |
| Minn. | St. Paul | 10.30 a.m., July | 26. 900 yds. gravel or crushed stone | August Hohenstein, Pur. Agt. |
| D. C. | Washington | July | 26. Const. complete of U. S. Post Office at Webb City, Mo. | J. A. Wetmore, Act. Supv. Archt. |
| N. J. | Passaic | 10.30 a.m., July | 26. Constructing concrete retaining walls | D. A. Van Houten, City Clk. |
| Cal. | Los Angeles | 4 p.m., July | 27. Cast steel elbows | R. F. Del Valle, Pres Bd. Pub. Service. |
| O. | Cleveland | noon, July | 28. Police patrol | A. R. Callow, Comr. Pur. & Sup. |
| N. Y. | New York | Noon, July | 28. Furnishing cement, sand and broken stone | R. A. C. Smith, Comr. Docks |
| Md. | Baltimore | 11 a.m., July | 28. Furnishing cylinder and hand brooms | W. A. Larkins, Comr. St. Clean. |
| Ga. | Quitman | July | 29. Constructing U. S. Post Office | Supervising Architect, Wash. |
| N. J. | Hillside | 8.15 p.m., July | 29. Collection and removal of ashes and collection and removal and disposal of garbage for one year | Geo. Compton, Twp. Clk. |
| Mich. | Albion | July | 30. Constructing U. S. Post Office | Supervising Architect, Wash. |
| Vt. | Burlington | July | 31. Collection of garbage | Secretary Board of Health. |
| Wis. | Ft. Atkinson | Aug. | 2. Constructing U. S. Post Office | Supervising Architect, Wash. |
| Minn. | Minneapolis | 11 a.m., Aug. | 2. 1,000 yds. gravel | Al. P. Erickson, Co. Aud. |
| Fla. | West Palm Beach | Aug. | 3. Eight-ton gasoline road roller | A. M. Lopez, City Clerk. |
| D. C. | Washington | 10 a.m., Aug. | 10. 15 pumps and one condenser | Bur. of Sup. & Accounts. |
| D. C. | Washington | Aug. | 11. Constructing Post Office at Wellsburg, W. Va. | J. A. Wetmore, Supv. Archt. |
| Pa. | Philadelphia | Noon, Aug. | 16. Constructing 700 ft. subway | A. M. Taylor, Dir. City Transit |
| Australia | Adelaide | Aug. | 24. Steel self-propelling barge loading bucket dredger | South Australian Harb. Bd. |

STREETS AND ROADS

Faunsdale, Ala.—Commissioners' Court of Marengo County have voted to sell \$120,000 warrants to build good roads, apportioning \$30,000 to Faunsdale and Dayton beats and \$30,000 to Demopolis and Spring Hill beats.

Douglas, Ariz.—Extensive paving work is being planned.

Eureka Springs, Ark.—Engineers of State Highway Department have begun surveying route of proposed highway from Eureka Springs to the Missouri line.

Russellville, Ark.—W. G. Neal, W. M. Simpson and O. H. Wilson, commissioners for road improvement district No. 1 of Pope county, have received from state highway department estimate of cost of 26 miles of macadam highway, which will extend from Arkansas river north through Russellville to Hector. Commissioners will at once advertise for bids for construction, to be opened not later than Aug. 1.

Miami, Ariz.—Gila County Board of Supervisors has fixed Aug. 12 as date for \$500,000 road bond issue.

Miami, Ariz.—The budget for Gila county highway bond issue, amounting to \$500,000, has been completed and approved at Globe by board of supervisors. Election to vote upon bond issue will be held on Aug. 12. Of half million dollars to be expended the north end of county is to receive \$105,000, the south end \$115,000 and the Miami-Globe district the balance, \$280,000. The money was thus apportioned upon advice of County Engineer R. G. Thomas.

Phoenix, Ariz.—To have city commission declare Bennett Addition a paving district and draw up plans involving pavement of 100,000 sq. ft. of streets is plan of householders of that section.

Auburn, Cal.—When \$2,000,000 State highway bond sale takes place at State Treasurer's office on July 28th, the Placer County Supervisors will purchase \$250,000 worth of bonds. It is understood that with money paid by Placer Board trunk line in Placer County and Roseville-Auburn lateral will be completed at once.

Red Bluff, Cal.—The State Highway Commission has ordered survey of Red Bluff-Susanville road and early com-

mencement of construction work will follow the completion of survey.

Stockton, Cal.—City has adopted plans and specifications for street improvements in various parts of the city that will result in expenditure of \$86,726.59 and City Clerk Fulch has instructed to advertise for bids, which will be opened some time this month. Plans call for asphalt concrete street, with 2-in. wearing surface. Following improvements are specified: Weber Ave. from the west line of California St. and from the east line of Edison St. cost \$10,582.10; Miner Ave. from the east line of Hunter St. to the west line of California St. and from the east line of California St. to the west line of Pilgrim St. cost \$36,550.08; Market St. from the west line of Center St. to the west line of Commerce St. cost \$2,017.84; Commerce St. from the south line of Main St. to the north line of Church St. (save the intersections of Sonora and Commerce Sts. and Market and Commerce Sts.), cost \$10,819.50; Sonora St. from the east line of San Joaquin St. to the west line of California St. cost \$4,915; Church St. from the east line of Hunter St. to the west line of San Joaquin St. and from the east line of San Joaquin St. to the west line of California St. cost \$4,915; Washington St. from the west line of American St. to the west line of Aurora St. cost \$5,857.22; Sutter St. from the south line of Sonora St. to the north line of Church St. and from the south line of Church St. to the north line of Hazelton Ave. cost \$3,908.75; San Joaquin St. from the south line of Taylor St. to the north line of South St.

Stockton, Cal.—City council has passed resolutions of intention to improve northwesterly, southerly and central roads of new city park, west of Yosemite Terrace, by grading all of said roads, paving northwesterly road with oil macadam and graveling a 20-ft. strip along center of other two roadways. Engineer's estimate for work is \$10,305.10.

Yreka, Cal.—The Siskiyou Supervisors have advertised for bids for construction of two miles of California-Oregon road between Ages and Thrall on Willow Creek.

Wilmington, Del.—Directors of the Street and Sewer Department are considering specifications for 116,000 yds. of

additional street paving. It was decided to advertise for bids for new work in a short time.

DeLand, Fla.—The Third DeLand Commissioner's District has voted bond issue of \$350,000 for road purposes by a 5 to 1 majority. This insures a good road leading out from DeLand and connecting with road from Daytona, will give Volusia County a system of hard roads that will be a credit not only to one of most progressive counties in the state, but to state itself. Bond issue provides for about 30 miles of hard surfaced roads, being principal highways of this section of county.

Webster, Fla.—County commissioners of Sumter county have passed resolutions agreeing to call election in very near future for purpose of giving voters of county opportunity of expressing their opinion on bonding county for \$250,000 for road improvement.

Augusta, Ga.—The largest and most important piece of street improvement that has been authorized by Council in several years has been agreed upon when report of streets and drains committee, recommending improvement of Campbell St. from Broad to Walker Sts and on portion of Walker St., received favorable action. According to ordinance authorizing improvement, the Belgian blocks on Campbell St., from Broad to Walker; and on Walker St., from Jackson to Campbell, will be taken up, and in their stead creosoted wood paving blocks will be placed.

East St. Louis, Ill.—Board of local improvements has taken first steps toward improvement of Bowman Ave., when they instructed City Engineer E. F. Harper to prepare plans for building of sewer from 1st to 16th St., where it will connect with main sewer.

Edwardsville, Ill.—City engineers have just completed survey of Center St. from Second to Clay with view of determining approximate cost of paving.

Peoria, Ill.—Provided plans formulated by County Superintendent of Highways Emery and the Peoria Good Roads Association are carried through, Peoria county will soon have an opportunity of voting \$1,000,000 bond issue for improvement of Peoria county roads.

Springfield, Ill.—Fourth St., between Monroe St. and Jefferson St., is to be

made into a real pavement at last. Asphalt will be used to repair the street, which has been mended a number of times recently with poor success.

Springfield, Ill.—With State providing half and counties half, a total of \$4,000,000 will be available for road improvements, and this sum, according to estimates, will build at least 500 miles more of hard roads.

Sterling, Ill.—There is considerable talk among supervisors of county to have hard roads next year made of macadam instead of brick or of concrete.

Brazil, Ind.—Commissioners have about decided to resurface North Meridian St. road with fine stone before asphalt oil is put on.

Indianapolis, Ind.—Another effort to widen and resurface North Meridian St., from 16th to 25th Sts., is to be made by Board of Public Works. Before starting on its vacation of two weeks, board adopted three resolutions regarding improvement.

Indianapolis, Ind.—Bids have been received by Board of Public Works for resurfacing with asphalt brick pavements in Maryland St. from Kentucky to Senate Aves. and Pennsylvania St. from Maryland to Georgia St. It is proposed to place asphalt surface over present brick pavements. For Maryland St. work, the Union Asphalt Construction Co. bid \$2.95 a lin. ft. on each side of the street and the Marion County Construction Co. \$3.35 a lin. ft. on each side of the street. For the Pennsylvania St. work the Union Asphalt Construction Co. bid \$2.80 a lin. ft. on each side of the street, and the Marion County Construction Co. \$3.35 a lin. ft. on each side of the street. The bids were taken under advisement.

Mt. Vernon, Ind.—Black Township gravel road bonds amounting to \$6,160 have been sold to Mt. Vernon National Bank at premium of \$18.50.

Portland, Ind.—Petition has been filed with County Commissioners asking for improvement of Blaine Pike from Water St. southwest to Green Park Cemetery.

Rochester, Ind.—Henry Township, Fulton County, in which Akron is chief town, has voted to build four gravel roads at approximate cost of \$60,000.

Clinton, Ia.—Resolutions have been adopted for improvement of various streets.

Emporia, Kan.—City Commission has decided to relet contract for paving West St. and 15th Ave., because J. R. Ramsey had not signed contract and furnished necessary bond. Commissioners instructed city clerk to advertise again for bids.

Hutchinson, Kan.—The South Main St. paving is to be built of vertical fibre brick and grout filler. City Engineer McLane recommends it as longest lived and most durable and also cheaper than asphalt filler.

Newton, Kan.—Ordinances have been passed providing for paving, curbing, etc., of various streets of city.

Fulton, Ky.—Matters are rapidly taking shape for building of Paducah-Fulton-Memphis highway on the 29th.

Lexington, Ky.—A petition asking that election be held in September on proposition of Judge Bullock to issue \$300,000 worth of 5 per cent bonds, with which to reconstruct roads and bridges of Fayette county, has been filed with County Clerk Theo. Lewis by S. B. Downey and 22 other duly qualified voters.

Louisville, Ky.—Bids for paving of 35th St. from Tyler Ave. to Parker Ave. and of 34th St. from Parker Ave. to Portland Ave. have been opened by the Board of Public Works. The work, to be original asphalt construction, is estimated to cost \$55,000, to be apportioned among property owners and will make new thoroughfare between Parkland and Portland. Three bids were submitted, that of American Standard Asphalt Co., apparently being the lowest. Other bidders were the Bickel Asphalt Paving Co. and the Louisville Asphalt Paving Co. Bids will be figured in detail and award of contract announced within a few days.

Middlesboro, Ky.—Both Knox and Laurel counties have sold their road bonds, which were recently voted to build pikes and bridges, including sections of Boone and Dixie highways. Knox sold \$200,000 in bonds at small margin above par, while Laurel sold \$100,000 in bonds at par. Rudolph Kleybottle & Co., of Cincinnati, bought both issues.

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New Albany, Ky.—City Clerk Taylor has been instructed to advertise for bids on the improvement of East Fourth St., from Main to the Pennsylvania tracks.

Sergeant, Ky.—Progressive citizens of Dickenson, border county in Southwestern Virginia, are back of movement to build model roadway from Freeling, 3 miles from border of two states, Kentucky across Cumberland mountains, via Osborn's Gap to Jenkins, the seat of the Consolidated Coal Co., in the Elkhorn coal fields of this county, a distance of about 12 miles.

Winchester, Ky.—Mr. J. M. Walker has been awarded survey of several county roads in Bourbon. Work of reconstructing number of roads by state and county will begin within a short time, one of them being, it is said, their portion of road leading from Paris to this city.

Mansfield, La.—All bids for paving have been rejected and new bids will be advertised for brick pavement, to be received on July 26, 1915.

Bangor, Me.—Preliminary survey is being made of proposed highway between Jackman and Kineo Station.

Baltimore, Md.—Commissioners for opening streets have notified Mayor Preston that St. Paul St. can be widened from Lexington St. to Hamilton St. for \$100,000, plus whatever city will have to pay to St. Elizabeth's Home.

Chester town, Md.—Following are bids received by County Commissioners of Kent on Galena-Lambson road, July 13, 1915: The Juniata Co., macadam \$19,259.70, concrete, \$26,792.50; Burgess & Rhodes, concrete \$24,200.70; Major Construction Co., macadam \$19,383.20, concrete \$24,534.30; Chesapeake Construction Co., macadam \$19,971.20, concrete \$26,304; Austin-Bennett Construction Co., macadam \$21,005.10, concrete \$26,560.30; George Long Construction Co., concrete \$25,259.60; McCarthy & Walker, macadam \$20,537.30, concrete \$23,919.80.

St. Joseph, Mo.—See "Miscellaneous."

Beverly, Mass.—Six bids have been received by city council public service committee for smooth paving of Rantoul St., between Bow and Chestnut Sts., at City Hall. Some weeks ago committee received bids for work and Simpson Bros. Corporation, of Boston, was lowest bidder, with figure of \$2.79 a sq. yd. City council ordered that committee ask for new bids and to frame new specifications, which would allow open competition and not tie job down to Hassam pavement, which contractors claimed that first call did. On second bid, which calls for approximately 10,500 sq. yds., lowest bid was \$2.65 a yd., made by M. McDonough, the Swampscott contractor, with further allowance of 25 cts. a yard if city provided the stone. The bids were as follows: H. F. Quinn, Boston, price \$2.78, allowance 23 cts., net \$2.55; Rockport Granite Co., price \$2.74½, allowance 22½ cts., net \$2.52; T. A. Monihan, Hamilton, price \$2.91, allowance 20 cts., net \$2.71; M. McDonough, Swampscott, price \$2.65, allowance 25 cts., net \$2.40; Cape Ann Granite Co., price \$2.84, allowance 22 cts., net \$2.62; Simpson Bros., Boston, price \$2.91, allowance 16 cts., net \$2.75.

Boston, Mass.—The State Highway Commission has opened bids for construction of about 2½ miles of improved highway in south part of Amherst from town line between South Hadley and Amherst, northerly over Notch road and West St. to present improved road in Mill Valley. Bids were as follows: Middlesex Construction Co., of Medford, \$18,430; R. F. Hudson, of Melrose, \$22,228; Lane Construction Co., of Meriden, Conn., \$16,965; M. Torchia and Antonio Bruni, of Boston, \$19,276; Perini Construction Co., of Ashland, \$17,476; Alco Construction Co., of Boston, \$17,154; D. O'Connell Sons of Holyoke, \$17,105. Contract was awarded to Lane Construction Co., the lowest bidder. Specifications include following: Excavation, 7,100 cu. yds.; borrow, 4,300 cu. yds.; excavation of ledge, 100 cu. yds.; cement concrete, 65 cu. yards; broken stone, 6,700 tons; bituminous material, 7,000 gallons; corrugated iron pipe, 12-in. 400 ft.; ditto, 16-in., 100 ft.; ditto, 20-in., 30 ft.; guard rail, 2,800 ft.; bounds 54.

Grand Rapids, Mich.—A Kent county board of directors will be organized to further proposed highway from Grand Haven to Detroit.

Duluth, Minn.—Rocmac surfacing, a new patent paving material, will be laid on 5th St. between 12th and 13th Aves.

E. this summer at cost of \$2,790, or \$1.24 a yd.

Duluth, Minn.—Upon resolution of Commissioner Farrell it was ordered that 30th Ave. west from Superior St. to Vernon St. be paved and curbs installed. From Superior to First St. there will be a 42-ft. pavement, and from First to Vernon St. it will be 25 ft. wide.

Duluth, Minn.—Bids for construction of 2½ miles of judicial highway which will furnish farm of Industrial and Solway townships with direct outlet to Proctor and West Duluth in this county and to Cloquet in Carlton County will be opened at August meeting of board. The county auditor has been directed to advertise for them.

Hibbing, Minn.—At meeting of Council orders to advertise for bids for pavements of road from viaduct on North St. and 1st Ave. to fair grounds and from viaduct at intersection of 3d Ave. to 1st Ave. at Alice, were passed. Bids for all kinds of pavements will be received before action towards awarding contracts will be made.

Meridian, Miss.—Bids submitted by number of firms for paving of several streets connecting with roads coming into city have been opened by good roads commission. R. K. Gough, of this city, made lowest bid, total amount being \$13,447.19. Next in order were bids of J. A. and H. E. Pigford of Russell, \$15,331.28; Owen Const. Co. of Vicksburg, \$16,350.50; Healy Const. Co. of this city, \$17,808.50; P. C. Powers & Sons of Memphis, \$18,493.84, and F. D. Harvey & Co., \$18,564.19. The good roads commission will meet again to consider bids, when contract will probably be awarded.

Galena, Mo.—Highways in the vicinity of Columbus are to be improved, if present plans can be carried out.

St. Joseph, Mo.—Ordinance has been introduced for paving Buchanan Ave. from 13th St. to Kemper St. with Trinidad sheet asphalt.

Fremont, Neb.—Ordinances have been passed for paving of various streets.

Atlantic City, N. J.—That Board of Freeholders are expecting to build Atlantic City-Absecon Blvd. within next year was made evident when board received bids and awarded contract to Artesian Well Drilling Co. to make test borings on lower or southerly route of proposed road. The bids received for this work follows: W. C. Sterns, \$2.25 per ft.; Phillips & Worthington, \$1.45 per ft.; Sprague & Henwood, \$1.25 per ft.; Ridpath & Porter, \$1.15 per ft.; Artesian Well Drilling Co., 75 cts. per ft.

Bound Brook, N. J.—By unanimous vote members of Borough Council has passed upon its first reading ordinance for pavement of Main St. from Bolmer's garage to Mountain Ave. with asphalt block.

Bound Brook, N. J.—Question of paving Main St., which has been in bad condition for some time, has been practically settled when delegation of property owners on that thoroughfare met with Mayor Packer and Borough Council and agreed on paving it from Bolmer's garage to Mountain Ave. with asphalt block and from Mountain Ave. to Shunpike with hassam concrete.

Egg Harbor, N. J.—On motion of Samuel Winterbottom, of Egg Harbor City, Board of Freeholders has decided to take over as county road that portion of Philadelphia Ave. between Campe and Agassiz Aves., which connects two county roads and improve it. Strip is 2,600 ft. long.

Elizabeth, N. J.—Ordinances for repaving of Broad St. and several telford streets are scheduled to be passed by Board of Works on first and second readings.

Elizabeth, N. J.—Ordinances appropriating \$70,368.06 for resurfacing several telford streets and \$32,000 for repaving Broad St. have been adopted upon final reading by city council.

Vinceland, N. J.—Borough Commissioners have advertised for special election on Aug. 17 to vote \$100,000 towards paving Landis Ave. for one mile.

Albany, N. Y.—There were sent to Niagara county from state highway department plans for all good road construction work in that county which has been approved by highway department for year. Contracts aggregating approximately \$200,000 will be let in near future. The plans for county include the Ransomville-Youngstown road, the Wilson Ridge road, Pendleton Ridge road, Dickersonville road and Market St., Lockport.

Albany, N. Y.—Following are 3 lowest bids received by State Commission of Highways at its office, No. 55 Lancaster St., Albany, N. Y., for the repair of the

following highways by State aid on Thursday, July 15, 1915: Road No. 1240, Binghamton City-Conklin Ave., Broome Co., 0.91 mi.: 1—Fitch & Douglas, Rochester, N. Y., \$43,212.80; 2—Frank Stento, Binghamton, N. Y., \$43,870.10; 3—Tyne & Wiley, Binghamton, N. Y., \$45,095.30. Road No. 5265-A, Salamanca-Little Valley, Pt. 1, Cattaraugus Co., 0.93 mi.: 1—Thos. Fitzgerald Co., Fredonia, N. Y., \$41,994.50; 2—H. E. Bunce, Olean, N. Y., \$51,056; 3—South Shore Const. Co., Erie, Pa., \$52,329.50. Road No. 1012-A, Sinclairville-Cassadaga, Pt. 2, Chautauqua Co., 1.51 mi.: 1—Dunkirk Const. Co., Dunkirk, N. Y., \$19,760.50; 2—Woolsey Const. Co., Davenport, Ia., \$19,830.75; 3—Wm. C. Evans, Ambler, Pa., \$20,592.30. Road No. 1296, Brocton Village: Mill St., Chautauqua Co., 0.77 mi.: 1—Wm. C. Evans, Ambler, Pa., \$11,982.75; 2—Dunkirk Const. Co., Dunkirk, N. Y., \$11,996; 3—Elmer M. Love & Sons, Corry, Pa., \$12,144.40. Road No. 1297, Ripley-Sherman, Pt. 1, Chautauqua Co., 3.55 mi.: 1—John P. Dolan Contg. Co., New York City, \$72,537.92; 2—Wm. C. Evans, Ambler, Pa., \$73,814.30; 3—Dunkirk Const. Co., Dunkirk, N. Y., \$74,154.30. Road No. 1298, Cassadaga-Burnhams, Chautauqua Co., 0.93 mi.: 1—Wm. C. Evans, Ambler, Pa., \$21,875; 2—Dunkirk Const. Co., Dunkirk, N. Y., \$21,943.50; 3—O. M. Severson, Erie, Pa., \$22,167. Road No. 5566, Cortland City: Owego St., Cortland Co., 0.23 mi.: 1—S. P. Hull, Cortland, N. Y., \$2,318.65; 2—Richard Hopkins, Troy, N. Y., \$2,498. Road No. 1289, East Aurora Village: East Main St., Erie Co., 0.34 mi.: 1—Busch & Percival, Buffalo, N. Y., \$16,601.50; 2—Rich Const. Co., Inc., East Aurora, N. Y., \$17,627. Road No. 5550, Aurora-Buffalo, Pt. 4, Erie Co., 0.59 mi.: 1—Busch & Percival, Buffalo, N. Y., \$28,459.50; 2—Wm. C. Evans, Ambler, Pa., \$28,789.42; 3—Rich Const. Co., Inc., East Aurora, N. Y., \$30,230.50. Road No. 619, Sammonsville-Johnstown, Fulton Co., 2.12 mi.: 1—Brady-Oltarsch Const. Co., Inc., New York City, \$20,237.01; 2—Clarence Welsh & Co., Gloversville, N. Y., \$20,264.50. Road No. 1290, Hannons Corners-Fairport, Monroe Co., 1.53 mi.: 1—Thomas Grady, Rochester, N. Y., \$15,679.50; 2—Newport Const. Co., Herkimer, N. Y., \$16,284.50; 3—Monroe Roads Co., Pittsford, N. Y., \$16,436. Road No. 511, Glen-Charleston, Montgomery Co., 3.81 mi.: 1—Dale Eng'g Co., Utica, N. Y., \$31,869; 2—Semper Bros., Watertown, N. Y., \$32,310.40; 3—Brady-Oltarsch Const. Co., Inc., New York City, \$33,010.51. Road No. 5280, Little Neck-Old Westbury, Nassau Co., 1.57 mi.: 1—Ulrich & Persicane, Brooklyn, N. Y., \$24,035; 2—Westchester-Dutchess Corp., Mt. Vernon, N. Y., \$24,208.50; 3—Nordone & Petrillo, Mt. Vernon, N. Y., \$24,762. Road No. 1209, Syracuse City: Court St., Onondaga Co., 0.27 mi.: 1—Mondo Const. Co., Syracuse, N. Y., \$12,654.30; 2—C. T. Hookway Const. Co., Syracuse, N. Y., \$12,660.85; 3—John Davin, Syracuse, N. Y., \$12,944.63. Road No. 1294, Manchester Vill.: State, Clifford & North Sts., Ontario Co., 1.38 mi.: 1—Chambers & Barnes, Rochester, N. Y., \$14,520; 2—Ribstein-Holter Co., Inc., Rochester, N. Y., \$15,140.50; 3—J. W. Brennan Const. Co., Inc., Geneva, N. Y., \$15,333. Road No. 1302, Morris-Oneonta, Otsego Co., 12.66 mi.: 1—J. A. Cuklin, Oswego, N. Y., \$130,509; 2—Ruddy-Saunders Const. Co., Inc., Troy, N. Y., \$132,741; 3—Peter F. Connolly Co., Horseheads, N. Y., \$133,067.60. Road No. 1303, Unadilla Forks-Bridgewater, Otsego Co., 2.52 mi.: 1—Alonzo Schaupp, Guilfordland, N. Y., \$19,932.80; 2—Newport Const. Co., Herkimer, N. Y., \$21,275; 3—Weed & Walsh, Mechanicsville, N. Y., \$22,049.30. Road No. 1295, Nyack-Rockland Lake, Rockland Co., 2.95 mi.: 1—Brady-Oltarsch Const. Co., Inc., New York City, \$38,135.28; 2—Ruddy-Saunders Const. Co., Troy, N. Y., \$39,914.72; 3—John A. Jova, Inc., Newburgh, N. Y., \$40,279.57. Road No. 5537, Canisteo-Whitesville, Pt. 1, Steuben Co., 1.72 mi.: 1—Kennedy Const. Co., Albany, N. Y., \$29,880.75; 2—Frank Malone, Syracuse, N. Y., \$30,964.30; 3—Greenfield Const. Co., Hornell, N. Y., \$30,995.80. Road No. 1291, Smithtown-Fort Salonga, Pt. 2, Suffolk Co., 3.25 mi.: 1—Nordone & Petrillo, Mt. Vernon, N. Y., \$33,879; 2—Westchester-Dutchess Corp., Mt. Vernon, N. Y., \$41,544.50; 3—Brady-Oltarsch Const. Co., Inc., New York City, \$42,025.41. Road No. 6570, West Hurley-Woodstock, Ulster Co., 2.97 mi.: 1—Frank Salvoucci, West Hurley, N. Y., \$23,214.60; 2—Marks Kearney, Hudson, N. Y., \$31,139.75; 3—Henry Clinton, Poughkeepsie, N. Y., \$31,870.70. Road No. 1228, Chestertown-Hague, Pt. 3, Warren Co., 5.13 mi.: 1—Kingsbury Const. Co., Hudson Falls, N. Y., \$69,583; 2—D. L. Anderson, Albany, N. Y., \$69,

707.75; 3—John H. Gordon, Albany, N. Y., \$69,852.50. Following are 3 lowest bids received by the State Highway Commission at its office, No. 55 Lancaster St., Albany, N. Y., for the repair of the following highways by State aid on Thursday, July 15, 1915: Repair Con. No. 812, Road No. 125, Lestershire, Road No. 174, Endicott, Broome Co., 3.67 mi.: 1—Lane Const. Corp., Meriden, Conn., \$33,292; 2—Chas. E. Haney, Camillus, N. Y., \$33,415.50; 3—Ruddy-Saunders Const. Co., Troy, N. Y., \$34,596. Repair Con. No. 810, Road No. 294, Clover St., Monroe Co., 2.92 mi.: 1—Dodge Const. Co., Rochester, N. Y., \$12,591; 2—Monroe Roads Co., Pittsford, N. Y., \$12,828; 3—Ribstein-Holter Co., Inc., Rochester, N. Y., \$12,859.50. Repair Con. No. 811, Road No. 172, Portland Ave., Pt. 1, Monroe Co., 0.67 mi.: 1—Flower City Contg. Co., Rochester, N. Y., \$14,828.50; 2—Dodge Const. Co., Rochester, \$14,841; 3—Whitmore-Rauber & Vicinius, Rochester, \$14,895. Repair Con. No. 489, Road No. 63, Scottsville, Pt. 1; Road No. 79, Scottsville, Pt. 2, Monroe Co., 1.52 mi.: 1—Union Paving Co., Schenectady, N. Y., \$15,074.50; 2—Langston Const. Corp., Albany, N. Y., \$15,317; 3—Whitmore-Rauber & Vicinius, Rochester, N. Y., \$18,195.50.

Dunkirk, N. Y.—Common Council expects soon to purchase small asphalt plant to be used in repairing asphalt pavements of the city.

Jamaica, L. I., N. Y.—Jamaica Local Board will, at meeting to be held Friday, July 23, act on petitions for regulating, grading, curbing and flagging Union Hall St., Jamaica, from South St. to State St.; also for grading various highways.

Lockport, N. Y.—The Lockport Common Council has approved plans for Lockport-McNalls part of Chestnut Ridge road. It voted \$9,700 as city's share of the cost.

Lockport, N. Y.—The highway committee of board of supervisors has approved of plans and specifications for improving Shawnee road from end of West Ave. pavement, a distance of 1.91 miles, to Saunders Settlement road.

New York City, N. Y.—Borough President Marks has announced that following streets are to be repaved: East 55th St., Third Ave. to Park Ave.; East 64th St., Park Ave. to Fifth Ave.; East 67th St., Park Ave. to Fifth Ave.; East 68th St., Park Ave. to Fifth Ave.; East 80th St., Lexington Ave. to Fifth Ave.; East 85th St., First Ave. to Park Ave.; West 25th St., Seventh Ave. to Eighth Ave.; West 55th St., Sixth Ave. to Seventh Ave.; West 100th St., Central Park West to Amsterdam Ave.; West 100th St., West End Ave. to Riverside Drive. Also new sidewalk on Cathedral Parkway (West 110th St.) from Seventh Ave. to Eighth Ave. Residents of these streets are asked to take notice that any desired sub-surface connections for gas, electricity, steam or water should be made at once, as after new pavement is laid no cuts will be permitted for one year.

Niagara Falls, N. Y.—Nearly \$50,000 worth of new pavement asked for by Board of Public Works has been approved by Common Council. The streets to be paved and estimated cost are: Fourteenth St. from Pine to Ferry Aves., \$15,200; Sixteenth St. from Pine to Elmwood Aves., \$15,700; Eighth St. from Ferry to Walnut Aves., \$6,500; Thirteenth St. from Niagara St. to Ferry Ave., \$8,725.

Niagara Falls, N. Y.—Board of Supervisors at Lockport have approved of plans for new county highways to total value of \$256,000, of which county's share will be \$159,000. Roads include Lockport-Youngstown road, parts one and two; the Wendeville-Lockport road, the Wendeville-Lockport road, parts one and two; the Dickersonville-Cambria road in Cambria and Lewiston and the Cambria-Wilson road in Cambria and Wilson. In addition, the State will build the Market St.-Lake Ave. road in the city of Lockport, for which the State pays \$16,000 and the county \$19,000, while the city of Lockport pays \$47,000 for additional width.

Potsdam, N. Y.—Board of Trustees of village have determined to call special election to raise \$5,000 to pave Depot St. with brick for its entire length. Election is set for from 1 to 5 on afternoon of Tuesday, July 27.

Schenectady, N. Y.—It has been voted to advertise for sealed proposals for paving of Superior Ave., Woodlawn Ave., Sixth St., Lexington Ave., Ontario St., Harrison St., Turner Ave., Third Ave. and Harvard St. with stone-filled asphalt. It is estimated 30,000 sq. yds. of

stone-filled asphalt, 33 sq. yds. of concrete and 30,000 sq. ft. of sidewalks will be required.

Syracuse, N. Y.—Canvass of proposals for five contracts shows the Schenectady Construction Co. is lowest bidder on nearly every combination of materials, with two exceptions, where the Antonio Mondo Construction Co. and F. J. Baker were lowest on vitrified blocks. The largest of the five contracts is for paving Madison St. from Walnut Ave. to South Beach St. The Schenectady Construction Co., Warner-Quinlan Asphalt Co., the Mondo Construction Co., Samuel Bonn, Guy E. Dickson and F. J. Baker were bidders on this and most of the other contracts. The Schenectady Construction Co. was the lowest bidder. Its proposal for vitrified block with cement group and Medina curb was \$16,974.90, about \$600 lower than the next bidder. Its bid for natural asphalt, five-year guaranty, was \$14,289.90, and for petroleum asphalt \$14,079.70, with no proposal for combination asphalt. F. J. Baker was the lowest bidder for combination asphalt and Medina curb at \$15,380.10. Practically same circumstances exist as to other two contracts. For paving Pine street from East Genesee to East Water St., the Schenectady company bid \$10,463.35 for vitrified block, \$8,996.60 for natural asphalt, and \$8,901.10 for petroleum asphalt, with no bid for combination asphalt. For paving Maryland Ave. from Euclid Ave. to Clarendon St., the Schenectady company's bid on the same combinations were \$5,589.20 for block, about \$100 below the next bid; \$4,883.70 for natural asphalt, and \$4,817.30 for petroleum asphalt. For paving Euclid Ave. from Westcott to Allen Sts., with block with Medina curb, F. J. Baker underbid the Schenectady company by 70 cts., but his bid with concrete curb was higher. The Schenectady company's proposal was \$8,849.75, while Mr. Baker bid \$8,849.05. The Schenectady company bid \$7,489.35 for natural and \$7,413.05 for petroleum asphalt with Medina curb. The Mondo Co. underbid the Schenectady concern by \$55 on vitrified block with Medina curb for paving Walnut Ave. between East Genesee and East Water Sts. The Schenectady company, however, was lowest on combinations of natural asphalt and petroleum asphalt, bidding \$8,998.30 for the former and \$8,895.40 for the latter material.

Kinston, N. C.—Work on extensive street improvements will be commenced here in a few days. Eighteen miles of sidewalks are to be paved with concrete, and something more than 8 blocks of roadway on N. Queen, Blount, North and Gordon Sts. are to be laid in concrete and asphalt. Paving will lead past two school buildings and to site of proposed union station from Queen St.

Winston-Salem, N. C.—Citizens residing on Shallowford St. between 4th St. at Joyner's store and W. 4th St. extension have petitioned board of aldermen for asphalt-concrete street, and order that petition be granted has passed first reading of board.

Winston-Salem, N. C.—The decision of highway commission to build concrete road from old Holloman Pl. west of city to "Reynolds," a distance of 1½ miles, makes another forward step in road building for Forsyth county.

Cincinnati, O.—The Campbell County Fiscal Court has rejected all bids for contract for reconstruction of the Flag Springs-Alexandria pike. Lowest of these bids was \$29,800, \$9,000 higher than estimate. New bids will be advertised for. It was decided to put new culvert over the creek at Bonnie Leslie.

Columbus, O.—Bonds for city's proportion of street improvements in East Main, East Long and West Broad Sts. have been authorized. Total amount is \$125,000.

Columbus, O.—State Highway Commissioner Cowan has had plans prepared for building or improvement of state highways in 38 counties at aggregate estimated cost of \$1,250,000. Contracts will be let at his office July 23. Largest job will be in Union county, where approximately \$60,000 will be spent paving little more than 4 miles of Urbana-Marysville road and building bridges and culverts.

Coshocton, O.—Council has ordered preparation of ordinances to pave Syracuse and East Main Sts.

Hamilton, O.—Estimate of cost of concrete road to be built from Engles Corner to Trenton with concrete culvert at farms of Hargitt and Stout has been placed at \$8,090.07 by Engineer Hammerle.

Mansfield, O.—Resolution has been adopted declaring it necessary to improve Mendota St., from Lexington Ave. to west line of Mulberry St., by paving road way with vitrified brick or block together with necessary headers, storm and sub-drainage.

Massillon, O.—Ordinance has been passed determining to proceed with improvement of E. Main St. from present end of pavement to east corporation line, by paving same with vitrified blocks laid upon 5-in. concrete base with bituminous filler, and by the necessary setting of new curbing and resetting of old curbing in and upon same.

Niles, O.—Ordinance has been passed for improving E. Park Ave. by grading, curbing, draining and paving of same.

Salem, O.—Perry township trustees J. F. Tescher and James K. Ramsey have filed with County Commissioners necessary petitions for improvement of Goshen Rd. from city limits to Mahoning county line, and also Canfield Rd. from city line to Mahoning county line. These roads will be graded and improved with macadam surface, and will connect up with other improved roads north of city.

Salem, O.—Bids on bonds to take care of renaving of Tenth St. and Goshen Ave., will be advertised for on 22d of this month. These bids will have to be advertised for 30 days. It will then require about 10 days before money is received, provided bonds are sold at that time. It is estimated that bids for the work can be asked for Sept. 4, and work commenced on paving of these two streets not later than Sept. 15.

Xenia, O.—All preliminary arrangements have been made and Jamestown city council will pass necessary legislation for paving of Main St. City Engineer Shumaker of Xenia will draw up plans and specifications for the paving.

Harrisburg, Pa.—Resident of Delaware and Chester Counties living along old Baltimore pike, running south from Wawa, have agreed with State Highway Commissioner Cunningham to contribute \$50,000 if road is constructed next year.

Harrisburg, Pa.—Ordinance has passed first reading in Council authorizing work on Chestnut St. from 21st to eastern city lines; 21st St. from Market to Hillside road; Hillside road from 21st to Holly and Holly St. from Hillside road to the Bellvue Park entrance. Bill will pass finally in a few days and contracts will be awarded as soon as possible.

Philadelphia, Pa.—Construction of 50-mile road between Philadelphia & Maryland line is being planned.

Williamsport, Pa.—It is expected that State Highway Department in a few days will advertise for bids for work to be done at Muncy, Milton and Stroudsburg. Muncy borough officials have been advised that it is probable that State Highway Commissioner Cunningham will advertise for proposals for paving Main St. only, and only so much of that as will keep within amount of money allotted for such work in Lycoming County.

Whitehall, Pa.—For construction of 4,100 sq. yds. various kinds of pavements, following bids have been received: Schaeffer & Ackerman, \$2.39 per sq. yd. for concrete and amiesite. Weaver Const. Co.—Macadam, \$1.92; bituminous macadam concrete base, \$3.35; bituminous macadam mixing, \$2.45; bituminous macadam penetration, \$2.20, and concrete, \$3.72. Allentown Const. Co.—Concrete, \$2.94, and amiesite \$3.23. R. S. Rathbun—Concrete, \$3.65, and amiesite, \$3.66. L. M. Kratz & Son—Macadam, \$1.70; bituminous macadam concrete base, \$2.87; bituminous macadam, mixing, \$2.72; bituminous macadam, penetration, \$2.54; concrete, \$2.54, and amiesite, \$3.19. Contract will be let July 20, 1915.

Wilkes-Barre, Pa.—Widening of Market St. flats road passing through Westmoor is being discussed.

Pawtucket, R. I.—Ordinance has been read and passed in concurrence providing for issue and sale of bonds to the amount not exceeding \$150,000 for highways and bridges.

Sumter, S. C.—Petition for election on \$225,000 for paving bonds has been handed in to council by E. I. Reardon, signed by majority of freeholders of city, and mayor was instructed to take proper steps for calling election to decide on issue of bonds for street paving.

Athens, Tenn.—A committee consisting of A. W. Prater, R. N. Cagle, T. W. Cantrell, Clay S. Matlock and J. L. Arn-

wine, has been appointed by McMinn County Court to select and purchase auto truck for use in keeping roads in repair and in building and looking after new roads. They propose to buy machine which can be used as truck or for pulling road roller and thus serve double purpose. McMinn County has just spent \$300,000 on her roads, and one of purposes in buying auto truck is to take county prisoners out to all parts of the country to work on roads.

Columbia, Tenn.—Board of mayor and aldermen has passed on first reading ordinance providing for issuance of bonds to defray expense of paving work.

Knoxville, Tenn.—Bids will be received by Knox County Good Roads Commission on July 23 to do first work out of the \$500,000 bond issue. Commission will construct connecting links with other counties, and first work will be awarded for this work.

Morristown, Tenn.—W. D. Holtsinger and J. E. Burke have been named by Hamblen county court as commissioners to have in charge spending of recent \$150,000 road bond issue.

Arkansas Pass, Tex.—The election held in this defined road district to decide issuance of \$75,000 bonds for construction and maintenance of macadamized gravelled paved roads, resulted in favor of issue by vote of 164 against 45.

Beaumont, Tex.—A proposal to surface Port Arthur road with rock asphalt has been received by County Commissioners from Uvalde Rock Asphalt Co., in which it proposed to surface road thickness of 3 inches of asphalt for 66 cts. per sq. yd.

Clarksville, Tex.—Five road bond elections have been held in Red River County and four out of five carried. The total amount voted on was \$417,500 and \$405,000 carried.

Clarksville, Tex.—About \$700,000 in bonds have been voted by Clarksville, White Rock, English and Avery Districts for construction of good roads. Bogota and Fullbright districts will vote in August.

Higgins, Tex.—Lipscomb county will vote on question of issuing \$50,000 in bonds, to be used in construction of roads, at an election to be held here.

Lubbock, Tex.—City council has ordered building of nearly 3 miles of cement sidewalk.

Texarkana, Tex.—As result of second Red River County good road bond election five of six precincts voting carried for bond issue. Total amount voted was \$440,000, and this sum is calculated to provide modern turnpike from Annona clear across county to Lamar county line, thus connecting up with good roads in to Dallas.

Seattle, Wash.—Following paving bids have been received by Board of Public Works: Thirty-seventh Pl. et al., paving—P. J. McHugh P. & C. Co., \$12,298.95; R. G. Stevenson, \$12,259; Coluccio & Bressi, \$12,959.28; Ind. Asphalt Paving Co., \$12,384.50; Washington Paving Co., \$14,135.50; McGuire Bros., \$13,540.71; Horton St. paving—Ferguson Const. Co., \$21,986.50; L. R. Ellis, \$21,237.86; McGuire Bros., \$21,227.55; S. Normile, \$20,844.15; T. Ryan & Co., \$20,920.95; Krogh & Jessen, \$21,063.25; John Contracting Co., \$21,392.85; B. H. Petley, \$20,984.20; Sparger Concrete Co., \$22,579.50; D. H. Traphagen, \$20,555.40; Coluccio & Bressi, \$20,821.05; West Stacy St. paving—T. Ryan & Co., \$10,712.90; Krogh & Jessen, \$10,904.70; Ferguson Const. Co., \$11,167.91; Sparger Concrete Co., \$12,229.30; D. H. Traphagen, \$10,763.13; Coluccio & Bressi, \$11,310.09; H. C. Young, \$11,219.75; Will Kopta, \$10,740.80; Western Paving Co., \$11,214; L. R. Ellis, \$10,569.75; McGuire Bros., \$10,966.18; Doyle & Keenan, \$11,011.76; N. W. Ball, \$10,770.18; Jahn Const. Co., \$10,748.26.

CONTRACTS AWARDED.

Tucson, Ariz.—Contract for paving Sixth Ave., Broadway, Scott, Jackson, Ochoa and other streets has been awarded to Warren Bros. Co. by city council. City engineer's estimate of cost of entire contract under unit prices quoted by Warren Bros. is \$118,495.05.

Quincy, Cal.—Supervisors have granted to Bradley Eng. Co. of Reno contract for constructing road in Sierra Valley. Its bid was for \$7,600 and 15 per cent additional for changes. This road is to be completed by Nov. 1. It is about 3 miles east of Beckwith in the Beckwith road district.

Santa Ana, Cal.—Board of supervisors

has received two bids for supplying county highway commission with 50,000 barrels of cement to be used in building paved roads and county bridges. The California Portland Cement Co. bid \$1.34 per bbl. and Riverside Portland Cement Co. bid \$1.31. Bids were referred to the commission and action upon them will be taken on July 13.

San Francisco, Cal.—By works board for paving, curbing, sewer and sidewalks on Parnassus Ave., between Willard and 4th Ave., to J. G. Harney; paving of 15th Ave., between Judah and Kirkham Sts., to W. V. McDonald; sewer in Prentiss St., from Cortland to Crescent Ave., to W. J. Tobin.

Stamford, Conn.—Council has awarded to William H. Arthur contract to pave Main St., from Glenbrook Road to Lawn Ave., and Summer St., from Main St. to Woodside St. Sheet asphalt is to be used in both jobs. It is to be laid, 1½ inches thick, over 5-inch concrete foundation, with 1 inch of blinder.

Tampa, Fla.—The Edwards Construction Co., of this city, has been awarded contract by board of commissioners of Pinellas County for construction of hard roays system of that county. Contract was entered into at Clearwater. It is a contingent contract, to be carried out if voters of county decide to authorize sale of \$600,000 of good roads bonds at election, date of which has not yet been selected.

Broeton, Ill.—For construction of 22,735 lin. ft. of highway of stone and gravel to Snyder & Barnett, Frankfort, Ind.

Portland, Ind.—Bids have been received for improvement of Arch and Pleasant Sts. City Engineer Clayton filed report of bids on Arch St. D. O. North and Co., of Bluffton total bid amounted to \$18,127.25; Fitzmaurice & Beard, of Portland, \$18,305.65, and the Mollering Construction Co., of Fort Wayne, \$17,617.10. The first two bidders bid on brick street with a concrete base, while the latter bidder bid on brick with a macadam base and sand filler. North was \$178.40 lower than Fitzmaurice & Beard, while the Mollering Construction Co. was \$510.15 lower than North. The council awarded the contract to D. O. North & Co. at their bid. Street will be brick with concrete base and grout filler. It was held that macadam base with sand filler was not specified and bid could not be accepted for this type of a street.

South Bend, Ind.—Contracts have been awarded by Board of Works to Western Construction Co. for asphalt pavement on Allen St., from Oak to Van Buren St., and H. L. Davis for grade, curb and walk on part of Hill St. First improvement will cost \$10,738.96, and other \$1,209. A preliminary award was made for pavement on Franklin St., from Sample St. to Indiana Ave.

Hutchinson, Kan.—Contract for sprinkling 12th Ave. E. has been awarded by city commission to M. M. Booher, the only bidder, at 11½ cts. per ft.

Iowa, Kan.—For construction of 37,530 sq. yds. National pavement on 4-in. concrete foundation and 8,040 cu. yds. earth excavation to Hawreddy & Ross, Kansas City, at \$1.35 per sq. yd. paving and 40 cts. per cu. yd. excavation. Total bid \$50,000.

Ottawa, Kan.—For construction of 4,900 sq. yds. 3-in. vertical fiber brick on Portland cement concrete foundation and 1,000 cu. yds. earth and clay excavation to A. L. Cook, Ottawa, Kan., at \$1.43 per sq. yd. for paving and 35 cts. per cu. yd. excavation. Total bid, \$11,750.

Elizabethtown, Ky.—Hardin County has closed contract with J. Van Fletcher to build four miles of northern end of Dixie Highway. The price is \$1.40 per cu. yd., Mr. Fletcher to crush and haul the stone, roll it and sprinkle it. This is worst four miles on road in Hardin County, and when it is completed, there will be a splendid road from West Point to Elizabethtown. Contract was awarded July 13.

Georgetown, Ky.—Contract has been let by Scott Fiscal Court for reconstruction of two turnpikes of 24 miles which are to be built with State aid. J. William Coyle and J. S. Lancaster, of Scott County, were successful bidders. Road will thus provide a boulevard between Grant, Owen and Scott Counties. Contractors are required to give bond of \$18,000. Contracts and bonds will be submitted to State Commissioner of Public Roads before being accepted, after which work will be begun at once.

New Albany, Ky.—Contract for improvement of Galt St., between Main and Market Sts., has been let to Goulding Bros. by Board of Public Works. Their bid of \$2.84 a ft. for macadam roadway and concrete sidewalks was recommended as the cheapest and best by City Engineer Mann.

Holyoke, Mass.—Bids for asphaltic road surface on Hampden St. have been opened, and contract for approximately 5,500 sq. yds. of paving awarded to Danl. O'Connell's Sons at \$1 a sq. yd.

Kalamazoo, Mich.—Contract for 613,000 repressed paving blocks has been granted to the Metropolitan Brick Co., price to be \$21.50 per 1,000.

Kalamazoo, Mich.—Contracts for curb and gutter improvements on eight Kalamazoo streets have been granted by council. The contracts were let with understanding that work on improvement should be started immediately. Harry Barton was given contract to build new curb and gutters along North Park St., between North and Patterson Sts.; North Park St. from Main to Kalamazoo Ave., and Dutton St., between Burdick and John Sts. This work will cost 35½ cts. per lin. ft. Adrian Kramer and John Baker were given contracts for work between Willard and Ransom Sts. on North Edwards; Walbridge St. from Willard to Ransom; Ransom St. from Edwards to Burdick; Grace St. from Portage to Pitcher, and East Vine St. from John to Jasper St.

Duluth, Minn.—Commissioner Farrell has reported that contract for one-course concrete pavement on Grand and Commonwealth Aves., between 81st and Zimmerman Aves. west would be awarded to E. W. Coons Co., of Hibbing, on their bid of \$43,613.11. Hilliard & Julien will surface Fifth St. between 12th and 13th Aves. east on their bid of \$2,790.80. A grading job on Regent St., between 46th and 47th Ave. east went to J. D. O'Connell on a \$234 bid.

Virginia, Minn.—City Council has awarded contracts that mean paving of 17 blocks this year, costing \$54,000, contract to lay creosote blocks being awarded to the Lawrence-McCann Co. of Eveleth. The bid was as follows: Three and one-half-inch creosote block, per sq. yd., \$2.44; 3-in. block, per sq. yd., \$2.34; earth excavation, 60 cts. per cu. yd.; rock excavation, \$6 cu. yd.; 7-in. concrete pavement per sq. yd., \$1.75. The General Contracting Co. of Minneapolis bid: Earth excavation, 65 cts. per cu. yd.; rock excavation, \$6 per cu. yd.; bitulithic paving, \$2.41 per sq. yd.; city furnishing the crushed rock free, paving \$1.96 per sq. yd. The Eveleth Construction Co. bid: Earth excavation, 60 cts. per sq. yd.; rock excavation, \$6 per sq. yd.; concrete paving, \$1.60 per sq. yd.; 3-in. wood block, creosote, \$2.38 per sq. yd.; 3½-in. wood block, \$2.46 per sq. yd. The Eaton-Butler Contracting Co. bid: Earth excavation, 65 cts. per sq. yd.; rock excavation, \$2 per sq. yd.; bitulithic paving, \$2.48 per sq. yd.; 3½-in. creosote blocks, \$2.55 per sq. yd.; 3-in. creosote blocks \$2.44 per sq. yd.; reinforced concrete paving, \$1.66 per sq. yd.; extra gravel filled, \$1.50 per sq. yd. Risberg-Marwick of Virginia were granted contract for laying of curb and gutter, the estimated cost of which is \$20,000. The Council decided not to use bitulithic in pavement. The winning curb and gutter bid was: Excavation, 60½ cts. per lin. ft.; alley crossings, 18½ cts. per sq. ft.; extra filling, \$1.50 per sq. ft. The Virginia Builders' Supply Co. was awarded contract for culverts. The contract will amount to about \$400. The Duluth Corrugated Roofing Co. and the Minneapolis Steel & Machinery Co. were other bidders.

Flemington, N. J.—Common council has awarded contract to J. L. LeCompte to macadamize Pennsylvania Ave., from Broad St. to borough line. Contract price is \$3,050.

Long Branch, N. J.—Four bids have been entered for contract for furnishing gravel for about a mile of Middletown-Red Bank road extending from Headden's Corner to Cooper's bridge, and contract was awarded to E. T. Bennett of Belfor at 94½ cts. per cu. yd. County is to do ploughing up of the road.

Binghamton, N. Y.—Bid of H. W. Fitzgerald to construct brick pavement on Glenwood Ave., using Binghamton brick at cost of \$1.95 per yd., was accepted by Board of Contract and Supply July 14. Work on improvement will begin at once.

East Syracuse, N. Y.—Geo. A. Whitehead has again been awarded contract for laying about 1,870 ft. of curbing and gutter on new McCool Ave. highway.

Hancock, N. Y.—The Ruddy & Saunders Construction Co., of Troy, has sublet Jeffersonville-Liberty repair contract to new construction firm of Armstrong & Trowbridge, of Middletown.

Newburgh, N. Y.—City Council on July 15 has re-awarded contract to James L. Kehoe for paving Mill St. with asphalt.

Watertown, N. Y.—Contract for combined concrete curb and gutter in Washington St. from Chestnut to Elm Sts. was awarded July 16 to Lou E. Cleveland by Board of Public Works. The curb is being constructed in connection with the paving work on upper Washington St. The cost will be approximately \$996.65.

White Plains, N. Y.—Contract for paving of Lafayette St., from Westmoreland Ave. to Fisher Ave., has been let to William T. McNeilly, who submitted lowest of three bids. The bids were: William T. McNeilly, brick on concrete, \$3,129.85; on trap rock, \$2,879.35. Frank Cestone, brick on concrete, \$3,434.25; on traprock, \$3,531.75; Petro Luciano, brick on concrete, \$4,227.50; on brick, \$3,903.75.

Cincinnati, O.—County Commissioners have acted on number of road and bridge improvements. Bid of \$6,033 by R. E. Cash for widening and macadamizing of Plainfield Rd., from Montgomery Pike, at Silverton, to Woodford Rd., at Kennedy, was accepted. Toph & Holden's bid of \$9,550.10 for improvement of Lees Creek Rd., from Biddinger Pike to Crosby Township line, was accepted. Ben Scull was awarded contract for a culvert on Bog Rd., at Flower's Pl., for \$1,900.50.

Hamilton, O.—Contract for repaving of Main St., between A and B, has been awarded to A. Wirtz Co. at their bid of \$3,822.75. This was lowest of seven bids received.

Hamilton, O.—Following contracts have been awarded by commissioners: Concrete steel box culvert at the Krucker-Weaver farms in Hanover Township to Vernon Hughes at the bid of \$139.22; concrete-steel box culvert at the farms of Stewart and Clawson in Fairfield Township to J. T. Guillaume at his bid of \$143.77; concrete-steel box culvert at the farms of Saylor and Butcher in Morgan Township to O. P. Davis at \$53.57; concrete-steel box culvert at Myers-Graves farms in Madison Township to D. E. Snider at \$199.17; concrete-steel slab and new parapets at the Ben Mee farm, Milford Township to William Snyder at his bid of \$127.58.

Portsmouth, O.—For construction of 12,300 sq. yds. brick pavement and 5,460 cu. yds. earth excavation to Kelley Bros., Portsmouth, O., at following bid: Walnut St., \$15,468.50; Norfolk St., \$2,049.50; Park Ave., \$4,745.42; Harwood Pl., \$1,949.50. Geo. S. Wilhelm is City Engr.

Sandusky, O.—A. G. O'Donnell has been awarded contract for building Medal wire cut brick pavement from St. Clair Ave. to the corporation line on West Monroe St. at meeting of Board of Control. Work will be started as soon as possible and section to be built by O'Donnell will join with part now under construction by Andrews Contracting Co. O'Donnell bid was \$21,777 for either Bolen, Metropolitan, Big Four and Deckman or Medal brick with stone curbing.

St. Clairsville, O.—By Belmont Co., for 9,000 sq. yds. bitumen binder, to Selpio & Wolf, Toledo, O. Estimated cost \$8,000.

Sandusky, O.—For construction of brick pavement, to A. G. O'Donnell, Sandusky, O.

Youngstown, O.—For paving work to Colucci Bros., Youngstown, at \$5,073.50.

Johnstown, Pa.—What probably will be last paving contracts of summer have been awarded by council after Solons had sized up tabulated bids, as follows: Cypress Ave., brick, \$1.93 per yd.; total, \$2,585.02. Ressler & Robertson, Grove Ave., brick, \$1.94 per yd., total \$2,414.60. Ressler & Robertson, Third St. Woodvale, brick, \$1.80 per yd., total \$675. John Goll Co. School Pl., asphalt, \$1.70 per yd., total \$3,119.50. Central Construction & Supply Co., Harrisburg, Grove Ave., \$2.05 per yd., total \$3,013.50. Central Construction & Supply Co.

Lebanon, Pa.—City council has met in special session for purpose of passing finally ordinances ordaining kind of paving material to be used in N. 8th St. and in 9th St. The measure passed without amendment, wood block being material specified. With wood block as material to be used it is certain that Franklin Const. Co. will have all three contracts. The figures submitted by successful bidder on three jobs are as follows: Lehman St., 5th to 9th St., \$33,071; 8th St., P. & R. R. to Lehman St., \$12,076; 9th St., Chestnut St. to P. & R. R., \$31,

464.50. Paving of these three streets will cost approximately \$76,611.

Newcastle, Pa.—M. E. Miller has been awarded contract for paving of S. Mercer St. at \$5,988.30.

Philadelphia, Pa.—Contractor Ed. Vare will probably get contract for repaving Passyunk Ave. with wood block, a job which will cost approximately \$106,000. Vare offers to do work for \$2.80 per sq. yd. for wood block paving and \$3.35 per sq. yd. for granite block pavement.

Philadelphia, Pa.—Edwin H. Vare, who submitted only bid for constructing South Philadelphia Plaza several days ago, has been awarded contract by Director Cooke of Dept. of Public Works. Vare's aggregate bid for work was \$123,000. Improvement placed under contract will extend from Oregon Ave. to Bigler St., between 13th and 15th Sts. A wide plaza, with ornamental granite, balustrades, open basins and fountains, trees, shrubs and cement walks, will be laid out.

Pittsburgh, Pa.—County commissioners have awarded contracts for road improvements that will aggregate expenditure of approximately \$120,000. Fifty-nine bids were submitted for work. Contracts were let as follows: Nobletown road in the borough of Carnegie, a distance of 500 ft., J. Toner Barr, \$2,011.15; Braddock and Ardmore road in Braddock Township, a distance of .31 mile, McCurdy Bros., \$7,085.50; Newtown and Rodi Road in Wilkins Township, from Turtle Creek borough line to County Bridge No. 3, a distance of .94 mile, Jas. Sweeny, \$25,568.30; McCoy Extension road in Stowe and Kennedy Townships, a distance of 1¼ miles, D. W. Challis & Sons, \$17,669.45; Wilmerding and Monroeville connecting road in Patton Township, 1¼ miles, R. H. Cunningham & Sons Co., \$25,203.70; Millers Run extension road in South Fayette Township, 2 miles, William J. Payne, Jr., Co., \$42,473.40. The McCoy Extension and the Wilmerding and Monroeville connecting roads will be of macadam construction and the others of brick.

Cranston, R. I.—The Broad St. asphalt macadam job has been let to E. P. Tracy, a Connecticut contractor, at \$1.17 per sq. yd.

Columbia, Tenn.—For asphalt concrete pavement on macadam foundation lowest bidder was Southern Asphalt & Const. Co., Birmingham, Ala., at 81 cts. per sq. yd. for paving and 38 cts. per cu. yd. for excavation.

Cathlamet, Wash.—County Commissioners have awarded contract amounting to \$27,000 to Sloane Bros. of Seattle, for constructing 6 miles of road from the Ellis farm to Skamokawa. This will be portion of Highway No. 19, which when finished will lead from Kelso to Long Beach. Next contract will be from here to east line of the county, near Oak Point, a distance of 12 miles. Funds for this road were voted at last regular election, when county was bonded for sum of \$75,000.

Mount Vernon, Wash.—Skagit County will have \$26,595 spent on road improvement during next few months. County Commissioners have let the contract for 2¼ miles of 16-ft. two-course concrete pavement, to be a continuation of state permanent highway No. 2, and to be known as state permanent highway No. 2A. New thoroughfare will extend east of Sedro-Wooley on the Minkler Rd. and will include a fine new bridge, 76 ft. long with concrete arches. Perch & Gass, of Seattle, were awarded contract. There were 12 bidders, amounts ranging from \$45,000 to \$26,595, lowest bid and successful one.

Mount Vernon, Wash.—By county for concrete pavement to Ferch & Gass, White Bldg., Seattle, Wash., at \$26,000.

Seattle, Wash.—For Permanent Highway No. 7A Newport-Issaquah Road to Sloan Bros. at \$14,402.90.

Sheboygan, Wis.—Contract was awarded July 8 for furnishing all material and doing all work in and about grading and paving with vitrified brick on concrete foundation on South 14th St. from Sheboygan River to south line of Wisconsin Ave., and concrete pavement on South 14th St. from Wisconsin Ave. to Indiana Ave., to John Braun at following bid: Brick, \$1.85 per sq. yd.; concrete, \$1.23 per sq. yd.; comb. curb, 48 cts. per ft. Total bid \$30,260.50. Other bidders as follows: Murphy Construction Co., Manitowoc, Wis., brick, \$1.99 per sq. yd.; concrete, \$1.24 per sq. yd.; comb. curb, 42 cts. per ft. Total bid, \$30,447.25. G. H. Stanchfield, Fond du Lac, Wis., brick, \$2.18 per sq. yd.; concrete, \$1.41 per sq. yd.; comb. curb, 48 cts. per ft.; total bid, \$34,356.25. Franz

Radloff, Plymouth, Wis., brick, \$2.15 per sq. yd.; concrete, \$1.33 per sq. yd.; comb. curb, 50 cts. per ft.; total bid, \$33,088. Birdsall-Griffith Construction Co., Racine, Wis., brick, \$2.15 per sq. yd.; concrete, \$1.33 per sq. yd.; comb. curb, 49 cts. per ft.; total bid, \$33,011.75. Pestien & Naumann, brick, \$1.98 per sq. yd.; concrete, \$1.33 per sq. yd.; comb. curb, 50 cts. per ft.; total bid, \$32,505.75.

SEWERAGE

Springfield, Ill.—Specifications for extension of town branch sewer in northwest part of city are prepared and ordinance providing for improvement will be introduced at next City Council meeting. It is plan to extend sewer 1,107 ft. to Kelly Branch, building this section 10 to 12 ft. in dimensions. From Kelly Branch sewer will be 12 by 14 ft. to a point on north side of Miller St. This will be an other extension of 240 ft., making 1,347 ft. in all or about four blocks.

Paducah, Ky.—It has been definitely and finally agreed at conference of city commissioners to go ahead with construction of first section of third district sewer and to submit to vote of people at regular November election bond issue for building of remainder of big trunk line sewer. First section of sewer will cost approximately \$60,000 and Commissioner L. A. Washington, of department of public works, will advertise for bids for this work. The present amount in sewer fund is \$62,929.32. It is estimated that cost of remainder of sewer will be about \$150,000 and efforts will be made to carry bond issue for this this fall. Engineer Stanley A. Miller completed sewer plans as revised about two weeks ago and specifications are now in hands of City Solicitor James Campbell.

Baltimore, Md.—E. H. Bouton has appeared before Baltimore County commissioners at Towson on behalf of Roland Park Co. and asked for co-operation and permission of county authorities in constructing sanitary sewerage system for Govans. Mr. Bouton's plan is to construct a sanitary sewerage system that will take care of Govans and Guilford.

Pittsfield, Mass.—An order for a 25-year bond issue of \$100,000 for sewer purposes has been adopted, places where \$85,000 of the \$100,000 is to be expended having already been decided upon.

St. Paul, Minn.—City will receive bids July 26, 1915, at 10 a. m., for building of Snelling Como Sewer system. Following is estimate of quantities: 19,800 lin. ft. 9-in. v. c. p. sewer; 18,250 lin. ft. 12-in. v. c. p. sewer; 6,870 lin. ft. 15-in. v. c. p. sewer; 1,636 lin. ft. 18-in. v. c. p. sewer; 2,516 lin. ft. 20-in. v. c. p. sewer; 624 lin. ft. 22-in. v. c. p. sewer; 2,822 lin. ft. 24-in. v. c. p. sewer; 2,926 lin. ft. 27-in. v. c. p. sewer; 1,616 lin. ft. 30-in. v. c. p. sewer; 633 lin. ft. 33-in. sewer; 1,354 lin. ft. 36-in. sewer; 3,010 lin. ft. 4 ft. 6-in. sewer; 2,953 lin. ft. 5 ft. 6-in. sewer; 3,196 lin. ft. 6 ft. 3-in. sewer; 659 lin. ft. concrete channels; 100 lin. ft. concrete culverts; 173 catch basins; 274 manholes; 9,000 lin. ft. piling measure below cut-off; 10,000 ft. B. M. 4"x10" pine stringers. Aug. Hohenstein is purchasing agent. J. E. Carroll is Supt. Const. & Repair.

St. Paul, Minn.—Construction of sewers in the St. Anthony Hill district is being discussed.

St. Joseph, Mo.—See "Miscellaneous." **Bayonne, N. J.**—Bids will be advertised for changing of grade and reconstruction of sewer on First St. between Ave. A and Newark Bay, and received on August 3.

Perth Amboy, N. J.—Ordinances have been adopted for construction of sewers in various streets.

Plainfield, N. J.—Construction of sewers on various streets is urged.

Pittman, N. J.—Pittman borough council has named Remington & Vosbury of Camden as engineers for the proposed new municipal sewer system. No date has yet been fixed for a special town election to decide whether or not the \$100,000 system shall be built.

Far Rockaway, N. Y.—Election has resulted in favor of sewer system bonds to amount of \$30,000.

Rome, N. Y.—City engineer has been directed to draw plans for continuation of storm sewer on Court St. so as to relieve condition on that street.

Mansfield, O.—Resolution has been adopted declaring it necessary to improve Buffalo and Elizabeth Sts. from Quincy St. to Newman St. by constructing 8-in. sanitary sewer on Buffalo St. from Quincy St. to Elizabeth St. and on Elizabeth St. from Buffalo St. to Newman St., together with necessary manholes.

Sandusky, O.—The Ohio State Board of Health, in its first session at Cedar Point, ratified plans for new Sandusky City sewage disposal plant and intercepting sewer system. The No. 1 intercepting sewer in south end is completed and disposal plant is nearing completion. The No. 2 system to be laid on Railroad St., between Meigs St. and plant, has not been started.

Springfield, O.—Acting under authority of city charter City Manager Ashburner has issued a call for special meeting of City Commission to consider \$4,000 bond ordinance for completing high level sewer and other matters of minor importance.

Youngstown, O.—Report of Mill Creek Park Superintendent Volney Rogers on feasibility of district sewer through that pleasure resort, will be filed with City Engineer F. M. Lillie within a few days.

Erie, Pa.—Bids will be received July 29 for construction of various sewers. City Engineer Briggs has been authorized to advertise for bids for construction of 9-inch diameter sewer in 3d St., from Reed 360 ft. west; in 4th, from Reed 610 ft. west, and in Reed, from 3d St. 440 ft. south.

Erie, Pa.—Revised plans for proposed experimental sewage disposal plant have been returned to Sanitary Corporation by City Engineer E. E. Briggs. They were checked over by him and with exception of few minor changes were found to be correct. As readily as changes are made plans will be submitted to state board of health for approval.

New Castle, Pa.—Property owners along Park and Boyles Aves. have presented petition to council asking that storm sewer be extended from its present terminus between two streets to Blaine St.

New Castle, Pa.—City Engineer Millholland has given report to council relative to extension of storm sewer on Carl St., which was asked for at session of council.

Philadelphia, Pa.—Within a few days Director Cooke of Department of Public Works, will ask for bids for completion of work on Indiana Ave. relief sewer, which really was begun about 15 years ago.

Philadelphia, Pa.—To carry to completion the Indiana Ave. low level sewer, an improvement started 15 years ago, Director Cooke, of Department of Public Works, will advertise asking bids for final work. There is \$70,000 available for construction of last portions of undersurface drain. Sewer is designed to relieve section running from Fifth to 29th Sts., and from Lehigh Ave. to Erie Ave., the main basins of which are at Eighth and Clearfield Sts., and at Broad St. and Allegheny Ave. There are two outstanding contracts, one for building section from Sixth to Seventh St., held by the Keystone State Construction Co., for \$120,000; other for construction of portion of sewer between Seventh and Ninth Sts., held by Pasenzzi Emilio, for \$80,000.

Wilkes-Barre, Pa.—Ordinance has been passed providing for construction of terra cotta pipe sewer for disposal of surface water only, along and through Breese St. from its intersection with Wyoming Ave. to its terminus and thence over private lands to Abrams Creek and providing for securing of necessary land for right of way.

Pawtucket, R. I.—Resolution has been passed providing \$1,250 for construction of sewer in Darlingdale Ave., and \$2,000 for sewer in Harding St.

Beeville, Tex.—By vote of 122 to 19, property taxpayers have authorized issuance of bonds in sum of \$15,000 for the extension of Beeville's sewer system. of issue for erection of municipal sewage Extension will be over 26,000 ft.

Dallas, Tex.—The \$250,000 unsold bonds disposal plant will be placed on market within a few months. Street Commissioner Otto H. Lang is working out estimate on work to show when sale of bonds will be necessary to secure funds. Bond issue was \$550,000, but only \$300,000 has been sold.

Dallas, Tex.—Bids on contracts which will complete municipal sewage disposal plant will be called for Board of City Commissioners and it is expected contract will have been let and actual construction work started by latter part of next month or first of September. The work yet to be contracted for includes disposal plant proper, the sewage pumping station and the big force main between the two plants. Bond issue for sewage reduction purposes will not cover cost of construction of plant as planned by \$200,000. Enough can be built

at this time, however, to take care of actual necessities of city so it can comply with anti-pollution measure passed by Texas Legislature and remaining units of the plant can be built later, Commissioner Cason said. The bond issue for sewage disposal work was for \$550,000. The total cost of the plant as planned will reach \$750,000.

Santa Anna, Tex.—Sewer bond election held here has resulted in 88 votes for and 28 against bond issue.

Salt Lake City, Utah.—Bids will be opened Aug. 4 for construction of large outlet sewer, about 23,000 ft. in length, consisting of reinforced concrete in sizes from 30-in. to 78-in. diameter or equivalent in rectangular section. Sizes and approximate lengths of each are: 700 ft. 30-in., 2,437 ft. 42-in., 6,760 ft. 60-in., 8,338 ft. 66-in., 3,706 ft. 72-in. and 1,691 ft. 78-in. Estimated cost, \$300,000. Sylvester Q. Cannon is City Engr.

Whitewater, Wis.—Contract for construction of new sewer system, including 36,000 ft. of pipe and disposal plant, is expected to be awarded shortly. It has been roughly estimated that work will cost about 80 cts. a ft., and price of frontage has been fixed at 40 cts. Specifications call for completion of work within a year. First half by Dec. 31.

Niagara Falls, Ont., Can.—Board of Health has decided to construct temporary sewer from several lots in Victoria Ave., between Ferry Hill and Bender Ave. to river. Cost will be charged to owners of property that will be benefited by sewer. At present property in question has no facilities for disposal of sewage, which has caused unsanitary conditions to exist.

CONTRACTS AWARDED.

Stockton, Cal.—City council has awarded contract for constructing of sewers in McCloud's Addition (Sonoma, Mendocino, Mariposa and Monterey Sts.) to W. J. Tobin of Oakland, who bid \$5,587.46 for the job.

Peoria, Ill.—For construction of tile and brick sewer (about 12 miles) to E. R. Harding Co., Racine, Wis., at \$202,824.50.

Indianapolis, Ind.—On recommendation of E. J. T. Jeup, city engineer, board of public works has approved assignment of contract for main sewer in Central Ave. from 38th St. to 15th St., by McLaughlin Contracting Co. to J. H. Cahill. Contract was originally awarded to McLaughlin Co. at \$5.43 a lin. ft., using certain type of segment block. Cahill, who bid on several kinds of material, had one bid of \$5.40 a lin. ft. on a type of segmental block which city engineer said he did not like as well as that on which McLaughlin Co. bid. Cahill will do work, using same material and at price at which contract was awarded to McLaughlin Co. Contract amounts to \$145,000.

Westlake, La.—For construction of Sulphur Drainage District No. 2, to Gray & Alexander, Vinton, La., at \$17,500.

Augusta, Me.—Bids for building of sewers on Pope, Middle, Bridge, Liberty and Spruce Sts. have been opened. Thos. Hickey was awarded contracts, he being the lowest bidder. Contract for furnishing material for above construction was awarded to Decker & Day, the only bidders.

Duluth, Minn.—Gust Hiner has been awarded contract for sanitary sewer in Minnesota Ave., from Oakta to 43d St., on a bid of \$2,882. A. Hedenberg was low bidder on similar improvements in Owatonna St. from Ewing Ave. to Kolstad Ave., his bid being \$1,529.

Billings, Mont.—Contractor Frank Savarey, with bid of \$2,350.80, has been awarded contract for installation of "Roosevelt school sewer." Only other bidder was Billings Construction Co., which submitted bid of \$2,416.20. Sewer, 1,100 ft. of which has already been constructed by the board of school trustees and later purchased by city, will extend between N. 23d and N. 24th Sts., from the alley between Montana Ave. and 1st Ave. north to 5th Ave.

Millburn, N. J.—For sewer construction to John Dorer, Irvington, N. J.

Orange, N. J.—Contract for storm sewer in Main St. has been awarded to Fusco Construction Co. at \$4,100.

Peekskill, N. Y.—For construction of sewer on Howard St. to D. D. Donovan at \$574.90.

Searsdale, N. Y.—For sewer extensions, Divisions A, B and C, from plans of Waring, Chapman & Farquhar, 874 Broadway, New York, contracts have been awarded as follows: Division A—Awarded to Fred. E. Gross & Son, Yonkers, at \$8,426. Unit prices as follows: 10-in. vitr. sewer:

100 ft. 6 to 8 ft. deep 80 cts., 450 ft. 8 to 10 ft. deep 94 cts.; 8-in. vitr. sewer: 340 ft. 6 ft. deep or less 56 cts., 400 ft. 6 to 8 ft. deep 69 cts., 1,300 ft. 8 to 10 ft. deep 80 cts., 600 ft. 10 to 12 ft. deep \$1.10, 100 ft. 12 to 14 ft. deep \$1.65, 10 ft. 14 to 16 ft. deep \$2.30; 20 Ys on 10-in. sewer 55 cts., 90 Ys on 8-in. sewer 45 cts., 6 Y-extensions \$1.90, 5 additional 2-ft. pieces 6-in. pipe 28 cts., 12 ft. 10-in. iron pipe sewer 90 cts., 36 ft. 8-in. iron pipe sewer 70 cts., 1 manhole 6 ft. deep or less \$38, 9 manholes 6 to 8 ft. deep \$45, 22 ft. manholes, depth over 8 ft. (necks), \$3.50, 2 spurs in manholes 6 in. 60 cts., 2 sewer drop connections 8 in. \$7, 1 lamphole on 8-in. sewer \$8, 1 flush tank inc. lampholes \$80, 800 yds. rock excav. \$2.25. Division B—Awarded to Fred. E. Gross & Son, Yonkers, at \$6,713. Unit prices as follows: 8-in. vitr. sewer: 100 ft. 6 ft. or less 56 cts., 2,200 ft. 6 to 8 ft. deep 69 cts., 1,400 ft. 8 to 10 ft. deep 80 cts., 50 ft. 10 to 12 ft. deep \$1.10, 250 Ys on 8-in. sewer 45 cts., 12 ft. 8-in. iron pipe sewer 70 cts., 2 manholes 6 ft. deep or less \$38, 8 manholes 6 to 8 ft. deep \$45, 6 ft. manholes depth over 8 ft. (necks) \$3.50, 2 spurs in manholes 6 in. 60 cts., 1 sewer drop connection 8 in. \$7, 1 lamphole on 8-in. sewer \$8, 4 flush tanks inc. lampholes \$80, 1,200 yd. rock excav. \$2.25. Division C—Awarded to Daly & Merritt, Port Chester, at \$31,965. Unit prices as follows: 10-in. vitr. sewer: 1,800 ft. 6 ft. deep or less 50 cts., 1,200 ft. 6 to 8 ft. deep 55 cts., 560 ft. 8 to 10 ft. deep 60 cts., 350 ft. 10 to 12 ft. deep \$1, 300 ft. 12 to 14 ft. deep, \$1.10, 150 ft. 14 to 16 ft. deep \$1.25, 200 ft. 16 to 18 ft. deep \$1.50, 150 ft. 18 to 20 ft. deep \$1.75, 250 ft. 20 to 22 ft. deep \$1.90, 250 ft. 22 to 24 ft. deep \$2.50, 100 ft. 24 to 26 ft. deep \$2.75, 60 ft. 26 to 28 ft. deep \$3, 10 ft. 28 to 30 ft. deep \$3.50; 8-in. vitr. sewer: 600 ft. 6 ft. deep or less 47 cts., 5,000 ft. 6 to 8 ft. deep 53 cts., 5,000 ft. 8 to 10 ft. deep 55 cts., 800 ft. 10 to 12 ft. deep 75 cts., 250 ft. 12 to 14 ft. deep 99 cts., 80 ft. 14 to 16 ft. deep \$1.21 10 ft. 16 to 18 ft. deep \$1.51, 200 Ys on 10-in. sewer 90 cts., 500 Ys on 8-in. sewer 70 cts., 60 Y-extensions \$1, 90 additional 2-ft. pcs. 6-in. pipe 40 cts., 72 ft. 10-in. iron pipe sewer \$2, 24 ft. 8-in. iron pipe sewer \$1.75, 7 manholes 6 ft. deep or less \$40, 41 manholes 6 to 8 ft. deep \$45, 110-ft. manholes depth over 8 ft. (necks) \$5, 24-ft. manholes depth below 16 ft. (13-in. walls) \$7, 10 spuds in manholes 6 in. \$1, 3 sewer drop connections, 8 in. \$25, 1 lamphole on 8 in. sewer \$50, 8 flush tanks inc. lampholes \$100, 5,000 yd. rock excav. \$3.

Syracuse, N. Y.—For constructing Huntley reinforced concrete sewer system to J. C. Schrade, Inc., Brooklyn, at \$82,731. M. B. Palmer is Deputy City Engr.

Middletown, O.—Contract for construction of Queen St. sewer, from Wilson St. to first alley east of Cleveland St., has been awarded to Arpp-Simpson Co. at their bid of \$1,793.97, the engineer's estimate being \$1,802.76.

New Castle, Pa.—C. E. Kimbrough has been awarded contract for N. Mercer St. sanitary sewer by council.

Williamsport, Pa.—Contract for storm sewer in Franklin St., to relieve Gramplan, has been let to Chas. A. Dugan at his bid of \$1,166.30.

Norfolk, Va.—By board of control to Batchelder & Collins to furnish department of public works with standard salt-glazed sewer pipes, and to R. W. Whitehurst Mfg. Corp. for iron castings.

Sheboygan, Wis.—By Board Public Works for 12,055 ft. 12, 10 and 8-in. vitr. pipe sewers, 58 manholes, etc., to Bird-sall-Griffith Constr. Co., Racine, at \$8,398.

Sheboygan, Wis.—Bids for construction of Oak St. storm sewer have been opened by members of Common Council acting as Board of Public Works for city of Sheboygan Falls. Bids were as follows: Peter Borst, total amount of bid, \$1,793.32; R. P. Kuehn, total amount of bid, \$1,828.05; Walter C. Bahr, total amount of bid, \$1,935.06. The David Van Stelle Co., total amount of bid, \$1,942.34. Contract was awarded to Peter Borst of Port Washington, Wis., his bid being lowest received.

Sheboygan, Wis.—Contract was awarded July 8 for furnishing all material and doing all the work in and about the construction and completion of a storm sewer in North 15th St. from Second Creek to John Court and in Martin Ave. from North 15th St. to a point 400 ft. west of North 15th St. in accordance with plans and specifications on file in our office, to D. Van Stelle Co., of Sheboygan, Wis., at following bid: 18-in. D. S. vit. pipe sewer, \$4c. per lin. ft.; 24-in. D. S. vit. pipe sewer, \$1.30 per ft.; 20-in. D. S. pipe sewer, 97c. per ft.; 15-

in. D. S. pipe sewer, 70c. per ft.; 12-in. vit. pipe, 54c. per ft.; 10-in. vit. pipe, 44c. per ft.; corner inlets, \$30; side inlets, \$24; manholes, \$30; special \$24; total bid, \$3,636.40.

WATER SUPPLY

Stockton, Cal.—Officials of Pacific Gas & Electric Co. announce that it will extend water mains to new district within ensuing year.

Waterbury, Conn.—Following estimates for proposed laying of water mains have been prepared by superintendent, and board voted to have committee on water make investigation of those most needed, and to go ahead with work as far as possible. Clairmont Ave., from South Willson St., westerly, 400 ft., \$610; Jefferson St., from South Main to South Elm St., \$1,550; 4th St., from South Leonard to Charles St., \$360; Highland Ave., from Washington Ave., southerly, 600 ft., \$1,080; Oakland Ave., from Lexington Ave., 300 ft., \$500; Tower Road, from end of present main to end of Tower Road (at Clowes Terrace), \$288.50; Clinton St., from Lexington Ave. to Emerson St., \$1,038; Francis St., from America St. to Clairmont Ave., \$720; Poplar St., from Green St. to Congress Ave., \$480; Wall St., from Oak St. to Berkley St., \$3,420; Albion St., from East Main to Eastwood Ave., \$960; Geddes Terrace, from terminus of present main to Hawthorne Ave., \$400; Hawthorne Ave., from Geddes Terrace to Norton St., \$400; Norton St., from Hawthorne Ave. to Burr St., \$920; Burr St., from Norton St. to Geddes Terrace, \$440; Geddes Terrace, from Burr St., 250 ft., southerly, \$415; Congress Ave., from end of main, 250 ft., southerly, \$450; Matthew St., from Byrnside Ave. to end of street, 400 ft., \$640.

Fort Wayne, Ind.—Plans will be ready and board of works will ask for bids for construction of 12-ft. dam in Spy Run creek above present bridge at Lawton Park within next two weeks. This dam, which will be 80 ft. wide, will back water up to depth of 12 ft. for purpose of furnishing constant supply of water for municipal light plant's condensing outfit. It will cost approximately \$4,500, and cost will be paid by lighting plant.

Redkey, Ind.—Redkey is assured of a waterworks system which is expected to be in operation within 90 days. The \$10,000 issue of waterworks bonds has been bought by Bank of Redkey. Directors of Redkey Water Works Co. will be ready to begin work on plant next week. Two good wells have already been drilled.

Van Buren, Ind.—The town board has decided to employ Charles Brossman as structural engineer, to prepare plans and specifications for erection of municipal water plant.

Sidney, Ia.—Election has been held in Sidney to decide city water question. There were two propositions voted upon. Whether city should secure right, through lease for ninety-nine years, to water from Tolen springs, located two and a half miles east of town, or whether city should issue bonds to amount of \$20,000 for purpose of extending mains, providing necessary machinery, etc., to carry the water to town.

Hogalsia, La.—Special election will be held August 1 to vote on question of issuing water, sewer and city hall bonds in sum of \$200,000.

Gretna, La.—Election will be held shortly to vote on question of issuing bonds for \$50,000, for construction of water system.

Boonsboro, Md.—State Department of Health has approved of plans for construction of new water supply pipe line.

Kalamazoo, Mich.—Improvement of water supply system is urged.

Virginia, Minn.—This city will be adequately protected against fire by installation of two new special pumps of 2,000 gallons per minute capacity, which have been ordered by water and light department to be connected with new 2,000,000-gal. reservoir. Pumps cost about \$4,000 each and will be laid on a concrete base.

Roundup, Mont.—City council has voted to install another unit in local pumping station and instructed city engineer to advertise for bids for a 750-gal. compound duplex pump and a 150-h.p. boiler with which to operate it.

Bayonne, N. J.—Communication has been received by City Commission from Harnes, Forbes and Company offering to resell to city 1,000 water bonds at over par value.

Camden, N. J.—Under direction of Water Chief Long of Camden plans have been completed for erection of auxiliary pumping station to be located at Delair.

It provides for building in which will be installed two pumps each with capacity of 5,000,000 gals. of water a day. Water will be drawn from 16 artesian wells bored sometime ago as test to see whether supply is adequate. It was ascertained that there is a subterranean stream from which unlimited quantities of water may be drawn, and only thing necessary is to bore additional wells.

Garfield, N. J.—At meeting of water plant committee of Garfield borough council Borough Engineer Anton L. Pettersen presented a report on proposed extension to water main in upper end of town. This report recommended that extensions be made through Bennet St., Shaw St., Grace St., Madaline Ave., Lanza Ave., Herman St., Van Busson Ave. and Madeline Ave. The cost will be approximately \$3,845.94.

West Orange, N. J.—Declaring that \$300,000 would be price for distributing system of West Orange Water Company, Carroll P. Bassett, president of company, submitted proposition to West Orange town council.

Ilion, N. Y.—The \$81,000 water bonds have been sold by Village Treasurer W. J. Powers to Farson, Son & Co., of New York.

Le Roy, N. Y.—A special election has been held in this village to vote on additional appropriation of \$15,000 for new waterworks system at Union Corners.

Lewiston, N. Y.—Bonds in sum of \$39,000 have been voted for construction of a water system.

Newark, N. Y.—Action must soon be taken in Newark for erection of new water pressure standpipes.

Schenectady, N. Y.—Bids will be received for 10-ton hand power traveling crane, runway tracks and appurtenances for use at pumping station.

Youngsville, N. Y.—Bonds in sum of \$28,000 have been voted for the construction of water system.

Anamoose, N. D.—Citizens have voted \$10,000 bonds for constructing water works system. Engineer has not yet been selected.

Marion, O.—Ordinance has been adopted authorizing Marion Water company to extend its mains on Bain Ave. from High St. to Vine St. A petition for extension of mains on Spencer St., from Church St. to Center St., has been referred to waterworks committee.

Sebring, O.—Secretary H. W. Ralsse, of county election board, has received notification from village of Sebring that election would be held in Sebring on date of coming municipal primaries, August 10, to determine whether or not Sebring should sell \$100,000 worth of bonds for water works.

Ebensburg, Pa.—Ebensburg borough council will in near future begin laying of 10-in. pipe line from borough reservoir to business section of town for fire protection.

Philadelphia, Pa.—Some of the money appropriated by Councils to improve the South Philadelphia water supply will be utilized to replace with concrete boxes the old fashioned wooden boxes now used to protect valves of water-pipes at street intersections. Chief Davis of water bureau, has arranged with City Controller Walton to use some of money for this purpose.

Orangeburg, S. C.—Bids will be received by City Council on Aug. 9 for issue of \$30,000 of City of Orangeburg, S. C., water and light coupon bonds bearing interest at 5 per cent per annum.

Columbia, Tenn.—The feature of meeting of Board of Trade was unanimous adoption of resolution declaring that citizens of Columbia should have pure drinking water. Improvements to system are being planned.

Maryville, Tenn.—Maryville water works bonds amounting to \$55,000 have been sold. Bonds sold at par, Ralph E. Oliver being purchaser. Maryville's water works will be owned by town. The contract price to install the water works is \$50,000, while \$55,000 in bonds were sold, the remaining \$5,000 to pay the engineer and miscellaneous expenses. The Rockford Electric Co. secured contract to supply electricity to pump the water.

Bingham, Utah.—Bingham has voted \$17,000 in bonds for completion of city water system. Some time ago there was \$25,000 voted, but it was found insufficient.

Janesville, Wis.—On report of board of public works, a resolution was passed for construction of water mains extensions on the following streets: Galena, from Park to High; South High, from Galena to a point on the south line of lot 9. Rockwood addition; Rock St., from Franklin to River; Oakland Ave. to the

proposed 6-in. main on Wisconsin St. to East St., and west from proposed sewer on Wisconsin to present 2-in. main on Division.

Honolulu, H. I.—Water-meter installation is planned by Honolulu municipal waterworks; a resolution appropriating \$8,500 therefor is before city board.

Hamilton, Ont.—Kerry & Chase, Toronto, have submitted to city report on water works, and construction of new reservoir on top of mountain, with capacity of 50,000,000 gals. with provision for future extension is recommended.

CONTRACTS AWARDED.

Dunsmuir, Cal.—The California-Oregon Power Company, which furnishes water to the town of Dunsmuir, has contracted for new water mains to be laid on Florence avenue, Dunsmuir at cost of \$10,000.

Oglesby, Ill.—Contract has been awarded for construction of connected system of cast-iron water supply mains, including valves and valve boxes, hydrants and all other specials to T. H. Woolcox at \$31,882. Also for laying of one hundred and sixty-two (162) lead water service pipes, including brass taps and stop-cocks, with spiral cast-iron shut-off boxes, together with all pavement and sidewalk repairs made necessary by laying thereof, in Walnut St., between Columbia Ave. and Watson Ave. at \$3,188.90.

Lawrenceburg, Ind.—Contract for building water and electric light plant in Batesville, a small town about fifteen miles west of this city, has been awarded to Hildenbrand Construction Co. for \$12,600. Work will commence this week.

Lowden, Ia.—For construction of waterworks system, following contracts have been awarded: W. D. Lovell, Minneapolis, Minn., awarded pipe line, elevated tank and tower and motor; F. E. Myers & Bros., Ashland, Ohio, awarded contract for deep well pump. Totals of bids were \$12,601.30 and \$370 respectively.

Boston, Mass.—For laying water pipes in Waldmar Ave., E. Boston, following bids were opened July 9, 1915: Thomas Burke, \$776.10; John T. Shea, Jr., \$798; James Barlotta & Co., \$928. Contract was awarded to Thomas Burke. Engineer's estimate, \$733.

New York, N. Y.—By Board Water Supply for Contract 140—drainage equipment for unwatering city tunnel of Catskill Aqueduct and shafts 11 and 12, to M. L. Bayard, Philadelphia, Pa., at \$37,000. For Contract 149—racks, shutters, screens, lifters, etc., in gate chambers at Ashokan, Kensico and Hill View Reservoirs, town of Olive, Ulster county and Mount Pleasant and Yonkers, to Concord Constr. Co., Brooklyn, at \$17,842.

Oswego, N. Y.—Department of water has awarded contracts for \$24,000 worth of material that is to be used in making improvements to water system under bond issue of \$35,000 recently authorized by taxpayers. M. B. Crawford & Son of this city underbid many of larger manufacturing concerns. Local firm will furnish 660 tons of cast iron pipe for \$15,734, together with valves costing \$457. Rensselaer Valve Co. will supply valves and hydrants for \$1,580.25, and Chas. Millar & Son Co. of Utica will furnish 14 tons of pig lead for \$1,680. Vincent Teslerio, a local contractor, was awarded contract for trenching at \$4,832.44.

Port Henry, N. Y.—For construction of a 1,000,000 gallon reservoir and a 250,000 gallon slow sand filter plant to Chas. Malone, Port Henry, N. Y., at \$14,493.

Rittman, O.—By Village Council for water works improvements bids received June 29 as follows: Pumping equipment to Bessemer Gas Engine Co., Cleveland, at \$4,694, to include gas engine (2 cycle), triplex pump, air compressor, receiver, motor, centrifugal pump and appurtenances. Pumping station, reservoir, water mains, etc., to C. A. Pierce of Rittman, at total of \$40,487, including valves, hydrants, brick masonry, carpentry, roofing, etc. Some of principal unit prices are as follows: 1.125 cu. yds. ea. ex. pump sta. and reservoir, 50 cts.; 78 cu. yds. plain conc., Class "A," \$7; 25 cu. yds. plain conc., Class "B," \$6.50; 370 cu. yds. reinforced concrete, \$14. C-1. pipe in place with trench excav.: 600 lin. ft. 3-in., 57 cts.; 4,200 lin. ft. 4-in., 50 cts.; 16,355 lin. ft. 6-in., 69 cts.; 16,386 lin. ft. 8-in., 87 cts. W-1. pipe, valves and fittings, in place: 120 lin. ft. 1-in., 40 cts.; 50 lin. ft. 1½-in., 75 cts.; 25 lin. ft. 2-in., \$1; 170 lin. ft. 2½-in., \$1.

Shadyside, O.—To Harper & Stewart, Bellaire, at \$33,233, for constructing water system.

Marysville, Tenn.—For installing filter plant and other improvements, to R. E. Oliver, Marysville, Tenn., at \$49,356.60.

LIGHTING AND POWER

Pasadena, Cal.—Carrying signatures of owners of about 2,000 ft. of frontage, petition asking that old-fashioned ornamental lights in central part of city be changed to single standard hydrogen lamps, such as one located at Pasadena Ave. and Colorado St., has been referred to Commissioner Allin for report. The new lights asked for are each 500 c.p.

Santa Ana, Cal.—Acting on petition for formation of lighting district at Buena Park, supervisors set Aug. 10 as date for election.

Washington, D. C.—An American consular officer in a British possession writes that a demand is being made that system for lighting passenger coaches on state railways by gas be changed to electricity in interest of traveling public. Consular officer transmits name and address of official of railroad who may be addressed relative to this opportunity. No. 17,470, Bureau of Manufactures.

Washington, D. C.—An American consular officer in Canada reports that an electric power company in his district is in need of meter clocks which will automatically charge power to consumer at regular lighting rate during rush period and at reduced rate for cooking purposes at other times. Quotations should be made c.i.f. destination. The Canadian customs tariff on electric meter clocks is 35 per cent. ad valorem. No. 17,478, Bureau of Manufactures.

Augusta, Ga.—Petition of property owners for the 600 block of Broad street for permission to erect white way posts on both sides of street has been referred to street lighting committee with power to act. It is understood that it is proposed to use concrete posts on this block, and Mayor Hayne requested Chairman H. H. Jones of committee to make thorough investigation of merits of such posts before authorizing their use.

Indianapolis, Ind.—The Merchants Heat & Light Co. has been ordered by board of public works, under company's contract with city, to put in arc lights at Walnut and Ketchum Sts., Deloss and Walcott Sts., Bellefontaine and 12th Sts., Leeds Ave. and alley south of Graydon St., and Vanderman and Orange Sts. Incandescent lights are to be put in at Meridian St. and alley north of Monument Pl. In the rear of 1832 No. Pennsylvania St., and in the rear of 636 No. Pine St. The arc light now at Olive St. and Pleasant run is to be moved to Linden St. and Pleasant run.

Indianapolis, Ind.—The Citizens' Gas Co. has been ordered by board of public works to lay gas mains in 17th St. from Rural St. to Temple Ave. and in Temple Ave. from the end of the present mains to point 300 ft. south of 17th St.

Marble Rock, Ia.—Election has resulted in favor of issuing Electric Light and Power Plant bonds in sum of \$4,500. H. C. Darland is town clerk.

Pittsfield, Mass.—The committee on fuel and street lights at its meeting has voted to recommend that lighting system on North St. be extended from its present terminus at White terrace as far northward as Waconah St. This will require seven lamps, which will be of nitrogen type. They will be installed by Sept. 1. An order for \$224 will accompany recommendation. System will then extend from union station to Waconah St. Later it is hoped to extend system on East St. to Elm St. and on South St. to West Housatonic St.

Niles, Mich.—Bids will be received up to 8 p. m., July 23, for improvement to water power plant. Barron Wetherby is City Clerk.

Owosso, Mich.—The Owosso Improvement Association is considering plans for installation of ornamental street lighting system.

Clarksdale, Miss.—City has voted to issue \$150,000 in bonds, a part of which amount will be for enlargement of municipal electric light plant.

St. Joseph, Mo.—See "Miscellaneous." **Dillon, Mont.**—Water Commissioner Phil. Anderegg, who had been appointed as committee to determine feasibility of installing new electric lighting system in city, has made his report to council, and favorable action has been taken on the matter. L. K. Adams and an expert

electrician appeared before council in order to fully explain cost of installation of proposed system.

Roundup, Mont.—Council has approved proposition to install modern lighting system in business section and passed resolution creating improvement district for that purpose.

Fullerton, Neb.—Bond issue of \$28,000 has been voted for installation of municipal electric light plant.

Hastings, Neb.—Mayor Madgett has appointed Councilmen Miller, Harm and Butzirus as committee to represent Council in negotiations with Central Electric Co. of Grand Island for supplying electric energy in this city.

Lincoln, Neb.—Board of control has decided to go into lighting business on more extensive scale and will supply current for all of state institutions located near Lincoln with exception of state university. Plans for new power plant, to cost \$25,000, and to be located at penitentiary, have been approved and bids asked.

Millville, N. J.—Specifications for new lighting system being discussed.

Perth Amboy, N. J.—Work upon new municipal electric light, heat and power plant is progressing rapidly and it is expected that within a few days contract will be let for installation of conduits for underground wiring along Smith and State streets.

Albany, N. Y.—Public service commission has approved the application for certificate of convenience and necessity for operation of electric light plant in village of Mannsville, Jefferson county, by C. A. Keller.

Binghamton, N. Y.—Aldermen have ordered sale of one block of \$148,200 bonds for municipal electric light plant.

Little Falls, N. Y.—The boulevard lighting system which has been under agitation in this city for several years will at last become a reality because of action of New York State Railways which has signified its willingness to pay one-third the cost of installation. The lighting system will be installed through Main St. from Alexander to 6th St.

Pomfret, N. Y.—The Pomfret town board has granted franchise to Niagara and Erie Power Co. to extend its lines and to sell electric current within the town and company expects to begin extension of its lines outside village of Fredonia in near future.

Port Jervis, N. Y.—An adjourned meeting of Common Council has been held in Common Council rooms to pass upon proposed lighting contract with Port Jervis Light & Power Co. in order that Manager W. R. Ottey of that company may order new material and start overhauling the old system. Contract which is about finally decided upon states that Light & Power Co. shall furnish city with eight 400-candlepower suspended lights on East and West Main Sts. from Fowler to Hudson Sts., nineteen 250-candlepower suspended lights on Jersey Ave. between O. & W. tracks and Fowler St., on Fowler St. between Ball St. and East Main St. and on Pike St. from Erie tracks to Barret bridge and 376 lights of 100-candlepower on brackets and suspended every 200 ft. throughout the city; that Light & Power Co. shall furnish glassware, ventilators and compensators on street ornamental lights and transformers and bulbs on fire alarm posts; that city is to have at least 100 suspended lamps and any number over that amount or changes city and lighting company shall bear expense equally. City is to pay lighting company \$12,132 a year for maintenance of system, which is \$1,416 more than present amount paid for its street lights. City is to pay \$15 each for lights on fire alarm posts.

Skaneateles, N. Y.—Village Board is preparing plans for installation of ornamental street lighting system in Genesee and Jordan Sts. in business section.

Madison, N. C.—Town of Madison is negotiating with Winston-Salem parties looking to installment of electric light plant.

Wake Forest, N. C.—Election will be held July 27 for voting on bond issue of \$10,000, proceeds to be used for improvement and extension of municipal electric lighting system. J. L. Bullard is Supt. of plant.

Cleveland, O.—Department of Public Service is preparing plans for extending ornamental lighting system on Chestnut and Walnut Aves. between East 9th and East 12th Sts.

Green Camp, O.—Special election will be held July 17 to vote on question of issuing Electric Light bonds in sum of \$5,000.

Marion, O.—A proposition in form of petition to install forty-four eighty-

watt, five-cluster lights on Center St. from Oak St. to the Erie tracks, has been presented to city council. According to terms of petition lights are to be installed by property-owners on street and are to be kept lighted by city for period of five years.

Sprio, Okla.—Town Treasurer I. W. Dunklin will receive sealed bids for Gas Plant bonds in sum of \$10,000.

Avis, Pa.—Much interest is being taken by residents of Avis in proposed new lighting system which is to be brought before council in regular session.

Williamsport, Pa.—Specifications for street lighting will be amended and new bids called for.

Orangeburg, S. C.—Citizens have voted in favor of issuing \$15,000 in bonds, proceeds of which will be used for improvement of municipal electric light plant.

Columbia, Tenn.—Committee appointed to look after possibility of construction of white way in Columbia has reported. They announced that Mr. Bennett, the expert employed by them to advise, had suggested that system containing 55 units be installed, and had made bid on construction of \$3,700, but at same time had recommended that merchants purchase their own material, and get city to put it in and to undertake maintenance.

Toronto, Ont.—The Toronto Hydro-electric System is preparing estimate of capital cost to city and hydroelectric system for installation of new street lighting system on University Ave., maintained by underground wires.

CONTRACTS AWARDED.

Pasadena, Cal.—W. A. McNally & Co., bidding \$9,355, made low tender for new Terrace Drive lighting system. Chas. C. Glass bid \$9,486; F. O. Engstrum Co., \$9,480, and Southern California Electric Co., \$9,785.

San Francisco, Cal.—Contract for lighting fixtures for new City Hall has been awarded by Board of Public Works to Leo J. Meyberg Co. for \$32,915. Section of work, not to exceed \$5,000, will be completed in Los Angeles.

Dakota, Neb.—For construction of municipal electric light plant to Johnston Electric Co., 1207 Harney St., Omaha.

Pennington, N. J.—By Borough Council contract with Public Service El. Co. for lighting streets of the village for period of three years.

Brownsville, Pa.—By Borough Council new contract with West Penn El. Co. for period of five years, under terms of which lamps now in use will be replaced with 400, 250 and 80-cp nitrogen lamps.

Harrisburg, Pa.—The public service commission has approved following contracts: Duquesne Light Co. and the borough of Greentree; Equitable Gas Co. and the city of Pittsburgh; Consolidated Gas Co. and the city of Pittsburgh; Vandergrift Electric Light & Power Co. and the borough of Vandergrift; Duquesne Light Company and the borough of Chalfant; Edinboro Light & Power Co. and the borough of Edinboro.

FIRE EQUIPMENT

Phoenix, Ariz.—City Manager Robert A. Craig has opened bids for combination automobile fire engine and hose truck, and also for such boxes and other equipment as will be required to make proposed extension of fire alarm system. For furnishing of fire engine there were four bids, one each from Seagrave Co., American-LaFrance, Jas. Boyd Co., and Geo. C. Hale Co. For furnishing equipment for extension of fire alarm system there were bids from Gamewell Fire Alarm Co. and Star Electric Co. Bids have been taken under advisement.

Warren, Ariz.—Funds are being raised for installation of alarm system, to cost about \$350.

Stockton, Cal.—City Council has approved of plans for new fire houses on north and south sides of city.

Greenwich, Conn.—Purchase of hook and ladder truck is being considered.

Mystic, Conn.—A special meeting of Mystic fire district will be held to decide on purchase of suitable fire engine and equipment for the village.

Peru, Ill.—Committee has recommended that council purchase American-LaFrance fire truck, with six-cylinder 105 H. P. engine. After much deliberation by council, it was decided that price of truck was too high and that other companies and makes of truck will be considered before purchase of a fire truck be made.

Fort Wayne, Ind.—A combination pump and hose wagon, motor propelled, to take place of steamer and hose wagon at No. 1 house and special tract for aerial truck, an auto truck for alarm department and new police patrol are items included in board of safety's budget which calls for \$206,346 for year 1916. The budget for 1915 was \$203,350, making but small difference.

Clinton, Ia.—A resolution ordering city clerk to advertise for bids for combination hose and chemical fire wagon for Station No. 3, the Lyons fire station, is in hands of committee on fire and water and chief of fire department.

Hampton Beach, Mass.—The Hampton Beach Volunteer Fire Department plans to make several improvements in its system this year. The most important of these will be installation of gong alarm system. The Hampton beach precinct, which is separate part of local government, voted \$300 at the annual meeting last spring for this purpose. Another improvement which is to take place this year is purchasing of 1,000 ft. of new hose. Money has been appropriated for it.

Malden, Mass.—Appropriation of \$17,000 is being considered for triple combination wagon, a ladder truck, new hose, etc.

Dillon, Mont.—Purchase of motor fire truck, capable of carrying about 7,000 ft. of hose, is being considered.

Haddonfield, N. J.—With subscriptions of more than \$2,000 already received the Haddon Fire Co., one of oldest in United States, has named committee to investigate different kinds of auto apparatus. Additional subscriptions are being received daily. It is planned to spend \$5,000 on new fire-fighting machinery of latest models.

Long Branch, N. J.—Bonds in sum of \$15,000 have been authorized for purchase of motor ladder truck, a tractor for the engine, and installation of alarm system.

Passaic, N. J.—Director of public safety has been authorized to purchase new apparatus for police and fire departments as follows: One new chassis for combination police patrol and ambulance, one new chassis for combination fire truck, one new runabout for use of first assistant and chief engineer.

Binghamton, N. Y.—City Clerk has been directed to advertise for proposals for erection of steel practice tower on site of new Central Fire Station on Carroll St. Bids will be received Aug. 4.

Rensselaer, N. Y.—Bids may shortly be advertised for motor apparatus, providing specifications are approved by Board of Aldermen.

Hamilton, O.—City Council has been asked to pass \$50,000 bond issue to motorize entire city fire department. Safety director plans to spend the \$50,000, if he gets it, as follows: New house, \$10,000; tractor for truck, \$5,000; four new trucks, \$20,000; fire alarms, \$6,000; police system, \$6,000; incidentals, \$3,000.

Salem, O.—Electors of Salem will vote at November election on ordinance providing for issuance of bonds in sum of \$15,000 for motorizing of chemical fire wagon and installation of modern and adequate fire alarm system.

Ebensburg, Pa.—One thousand feet of new fire hose and another gasoline fire engine may be purchased for fire department.

Farrell, Pa.—Bond issue of \$60,000 has been voted and some of funds will be used for motorization of department.

Glenolden, Pa.—Glenolden Borough Council has appropriated \$12,000 for 1915 expenses, including \$1,000 for new apparatus for fire company.

Johnstown, Pa.—Council has ordered combination chemical and hose gasoline motor truck, capable of throwing 500 gallons of water a minute.

Waynesboro, Pa.—Council will shortly fix date for opening of bids for motorization of fire department.

Central Falls, R. I.—The City Council joint standing committee on fire department of Central Falls has under consideration purchasing of motor-driven apparatus.

Lincoln, R. I.—Citizens of Lime Rock are considering procuring supply of chemical tanks and hand grenades, such as are used by nearly all regularly organized fire departments, and have them on hand in case of fire, as water service in other parts of town has not been extended to this section yet.

Pawtucket, R. I.—Ordinance has been read and passed in concurrence, providing for issue and sale of bonds to amount not exceeding \$25,000 for motor fire apparatus and \$5,000 for fire station purposes.

Pawtucket, R. I.—It has been voted to purchase gongs for three fire stations in Riverpoint Fire District.

South Kingstown, R. I.—South Kingstown has decided that it needs an adequate motor driven fire truck.

Sheboygan, Wis.—Bids will be received at this office until July 21, 1915, at 4 o'clock p. m., for furnishing to city of Sheboygan, Wis., 500 lin. ft. of 2½-in. fire hose, equipped with Higby couplings.

West Allis, Wis.—City is planning to install a police and fire alarm system from part of the proceeds of a \$35,000 bond issue.

CONTRACTS AWARDED.

Phoenix, Ariz.—City Commission in special session has approved recommendation of City Manager Robert A. Craig that bid of Star Electric Co., Binghamton, N. Y., for equipment necessary to make the proposed extensions to the fire alarm system, be accepted, at price of \$15,821.75.

Oelwein, Ia.—Contract for 250 ft. of 2½-in. rubber lined cotton hose has been awarded to Bi-Lateral Fire Hose Co., of Chicago, and 250 ft. to Chicago Fire Hose Co.

Portland, Ore.—To the American-LaFrance Fire Engine Co., Inc., by A. G. Long, Portland, Ore., Type 16, \$12,500; Type 31, \$11,950.

BRIDGES

Igo, Cal.—All bids for construction of new bridge across Clear Creek a mile east of Igo, have been rejected by Supervisors in Redding. Plans called for steel bridge with concrete floor. The Supervisors have decided to call for plans for reinforced concrete structure. Lowest bid offered for good bridge was \$8,894.

Placerville, Cal.—The El Dorado Supervisors have directed Saph & Rushmer and Albert Given of Sacramento to prepare plans and specifications for a steel wagon bridge with concrete abutments to cross South Fork of American River at Soloma.

Red Bluff, Cal.—Supervisors have voted to readvertise for bids for construction of three bridges across sand sloughs to east of Red Bluff, and if, after obtaining legal advice from district attorney, it is found possible, will proceed at once to business of calling an election for the purpose of bonding the county for their erection.

Sacramento, Cal.—Eight new units of State highway system, to cost, according to State engineer's estimate, not more than \$362,000, have been adopted by State Highway Commission. Bids will be called for latter part of July. New work includes construction of three bridges to cost \$88,000 or less and 33.92 miles of highway in the counties of Colusa, Marin, Shasta, Alameda, Los Angeles and Santa Clara. Three bridge contracts to be let this month form one of most important links in highway work in Northern California. One reinforced concrete bridge with a length of 532 ft., costing approximately \$40,000, will cross the Sacramento River near Dunsmuir. Next longest bridge will be in Shasta County, crossing the Pit River, near Baird. It will be 395 ft. long, costing about \$38,000. The smaller of the three will be in Shasta County, and cross Boulder and Shotgun creeks, and will have two spans, 28 and 35 ft. in length, costing about \$10,000.

Bridgeport, Conn.—Approval of United States War Department to Stratford Avenue Bridge Commission's plans for location and construction of new Stratford Ave. bridge, have been received by Mayor Wilson, and advertisements for bids for contracts will be published. These bids will be received at office of Board of Contract and Supply at noon on August 7, and will be referred by board to bridge commission for final consideration.

Crown Point, Ind.—Two issues of Lake County bridge bonds for \$100,000 have been sold to First National Bank of this city for premium of \$2,392.50.

Indianapolis, Ind.—The National Concrete Co. has submitted to board of public works only bid received for adding

two spans to West Washington St. bridge across White River. Bid was \$110,000. Company has contract for five spans of bridge now under construction, this contract amounting to \$331,000.

Beverly, Mass.—The Essex county commissioners will submit plans for rebuilding of Essex bridge between Salem and Beverly at meeting of officials.

Boston, Mass.—Plans have been prepared by Essex County Commissioners to rebuild Essex bridge between Salem and Beverly, without interrupting traffic to and from North Shore.

Lynn, Mass.—The Essex County Commissioners will submit plans for rebuilding of Essex bridge between Salem and Beverly at meeting of officials of those cities. The plans provide for filling in part of flats under present bridge, leaving small channel at draw. This will reduce cost of maintaining bridge and permit installation of tide gates, so that water in Danvers and North Rivers may be kept at hygienic level.

St. Joseph, Mo.—See "Miscellaneous."

Billings, Mont.—Word has been received in Billings that the Security Bridge Co. of this city was awarded contract for building bridge over the Little Missouri River in North Dakota on Yellowstone trail. Bridge will be 308 ft. long, consisting of two spans of 120 ft. each, a dirt fill and another span of 50 ft. and approaches. Work will be started at once.

Nashua, N. H.—Resolution indorsed by Mayor James B. Crowley to authorize issuing of bonds to amount of \$15,000 for purpose of repairing and rebuilding bridges has been introduced at regular meeting of Board of Aldermen.

Atlantic City, N. J.—Plans and specifications for construction of three small bridges on Wheat road between Hammon and Buena have been approved on recommendation of Bridge Committee of the Board of Freeholders, and it was ordered that bids be received at next meeting in August.

Belmar, N. J.—Borough Council has appointed committee to confer with the Monmouth County Board of Freeholders concerning building of new bridge between Belmar and Avon, across Shark River Inlet.

New Brunswick, N. J.—Board of Freeholders have received estimates for construction of concrete and steel draw bridge over South River, between Sayreville and South River. The bids, which showed difference of \$20,000 between highest and lowest bidders, were referred to bridge committee and contract will shortly be awarded. The bidders on bridge work were: Abraham Jelin, New Brunswick, \$70,829; General Contracting & Engineering Co., of New York, \$66,714; Long-Broadbent Co., Hackensack, \$87,706; McHarg-Barton Co., of New York, \$76,683.

Plainfield, N. J.—Bids have been received by joint committee of Board of Freeholders and Morris county freeholders for two-county bridge over Passaic river between Gillette and Murray Hill. Lowest bid was \$73,333 and was submitted by Philip A. Hickey, of Somerville. Highest bid was \$111,469.

Bridge will be reinforced concrete and will be 33 feet wide, and span 70 feet.

Binghamton, N. Y.—Notice is given that special election will be held on 30th day of July, 1915, at City Hall and six other designated polling places, at which time question whether sum of \$30,000 shall be raised by issuing bonds for purpose of constructing six bridges as follows: One across Pierce Creek on Conklin Ave., one across Pierce Creek on Belden St., one across Noyes raceway on Water St., one across Noyes raceway on Eldredge St., one across Trout Brook on Holland St. and one across Park Creek on Morris St. extension.

Binghamton, N. Y.—A session of Board of Estimate and Apportionment has been held at which time ordinance passed by Common Council authorizing issuance of \$25,000 worth of emergency bonds to be used in repairing bridges and buildings damaged by flood was approved.

Hamilton, O.—Butler County is soon to see its first concrete road. It will run from bridge at Trenton to Engle-side and will cost something near \$8,000. County Engineer Fred M. Hammerle has prepared specifications and estimate of cost at \$8,090.07 and filed them with County Commissioners, who will take bids for work in four weeks.

Philadelphia, Pa.—Bids which showed

marked decrease when compared with estimated cost of work submitted by a number of contractors have been received by Chief George S. Webster, of Bureau of Surveys, for construction of three bridges for highways in various parts of city. Most expensive operation will be at Fifth St. and North Penn branch of Philadelphia & Reading Railway. The Brown King Construction Co. submitted lowest bid, that of \$59,970, for work to be finished in ten months. Estimated cost was \$70,000. Thomas J. Reilly was low bidder on other two bridges, one to carry Third St. under Newtown Connecting Railroad, other to carry Fisher Ave. under North Penn Railroad. The proposal for the first contract was \$24,000, while estimated cost was \$32,000. The bid for second contract was \$22,000, while estimated amount to be expended was \$32,000. Ten other contractors bid on Third St. bridge and eleven bid on the Fisher Ave. contract.

Chattanooga, Tenn.—A bridge 250 ft. above Kentucky River will be built on eastern division of Dixie highway between Knoxville and Cincinnati, according to present plans of county officials of Fayette and Madison counties, Kentucky. Bridge which has been proposed by Judge Bullock of Fayette County Court will be constructed at or near Clay's Ferry between Lexington and Richmond and will cost in neighborhood of \$150,000.

Chattanooga, Tenn.—County Road Commission has expressed opinion that it would be act of economy to replace all of 1,800 wooden bridges in Hamilton County with concrete structures. Superintendent estimated that cost of repairs annually amounted to something over \$12,000, whereas concrete bridges could be built for \$52,000.

Dandridge, Tenn.—County Court has passed order appropriating \$5,000 to assist Grainer County in building of good steel bridge over Houston River, beyond Jefferson City, where pike reaches that stream. To meet this outlay county, under statute of some years ago, is to issue interest bearing warrants, maturing in one, two and three years. Proposed bridge will cost from \$12,000 to \$15,000 and will be of great benefit to that section of the county.

CONTRACTS AWARDED.

Marysville, Cal.—The new reinforced concrete bridge across Clover Creek on road to Redding is to cost \$3,353. The Supervisors have let contract to William Stephens, of Redding.

Trenton, Ga.—The Champion Bridge Co., of Wilmington, O., represented by H. C. Quinn, has been awarded contract for superstructure of bridges.

East St. Louis, Ill.—Contract to furnish steel for East St. Louis approach of St. Louis free bridge has been awarded by St. Louis Board of Public Service to American Bridge Co. Contract for steel aggregates \$1,035,000.

Jeffersonville, Ky.—Thirteen bids for building five bridges in Clark County, Ind., have been opened by board of county commissioners at meeting in Jeffersonville. One of structures, which is to cross Muddy Fork of Silver Creek, at Speed, is an important one and this was let to East St. Louis Bridge Co. The county is to pay \$3,325 and the Louisville Cement Co., \$1,325. A temporary bridge will have to be erected to take place of one now in use and \$290 was allowed for this. Bridge that is to be built at Borden was let to George Hostettler for \$444.50. In Oregon Township three bridges, which are at Cole's Ford, Stewart's and Zeller's are to be built and the bid of \$1,675.75 for the three, which was submitted by Frank Roerk, was regarded as best and lowest one.

Billings, Mont.—Contracts for construction of two bridges in Yellowstone County have been awarded to Security Bridge Co. by County Commissioners. One contract for construction of a bridge over Billings Land & Irrigation Co. ditch and was awarded on bid of \$1,723. The Billings Engineering & Construction Co. submitted bid of \$2,249. The second contract for construction of bridge over Big Ditch near Harmison ranch was for \$1,066. The Billings Engineering & Construction Co. submitted bid of \$1,498.

Atlantic City, N. J.—After many months of delay contract for construction of new bridge over Mullica River has been approved and awarded by Boards of Freeholders of both Atlantic and Burlington counties and work will

begin immediately. Contract price for improvement is \$79,800, one-half of which is to be borne by each county.

Contract was awarded to Lupier-Remick Company, of Buffalo.

Elizabeth, N. J.—Union Ave. bridge across Rahway river at Elizabeth, is being taken down and will be replaced by concrete arch bridge which has been ordered by Union county freeholders. The Weldon Construction Company has contract and expects to complete work in about three months. It will cost \$11,270.

Long Branch, N. J.—At special meeting of Board of Freeholders contract was awarded to Frank Anderson, of Matawan, for replanking of Mott bridge, at Keyport, on his bid of \$3,134, that being lowest of six bids submitted ranging up to \$4,913. Louis J. Stelin, of Red Bank, was awarded contract for replanking Oceanic draw bridge on his bid of \$5,767, this being lowest of 12 bids, ranging up to \$8,406.

Morristown, N. J.—Members of Union County Board of Freeholders sat with representatives of Morris County in Morris board room and received bids for two-county bridge over Passaic River between Gillette and Murray Hill. Eleven bids were received, of which the lowest was that of Philip A. Hickey, of Somerville, for \$7,333. The highest bid was \$11,449. The structure will be of reinforced concrete, with a span of 70 ft. and a width of 33 ft.

Niles, O.—George Stein, of this city, who recently completed contract for paving Robbins Ave. bridge with creosoted wood block has been awarded two new bridge contracts by County Commissioners. He will rebuild Van Wye bridge in Weathersfield Township near Niles at cost of \$989 and will construct retaining wall at Swine Creek, Farmington, at cost of \$99.50. N. P. Hoffman has been given job of repairing Mosquito Creek bridge in Champion, contract figure being \$410. Other contracts awarded by Commissioners follow: Bridge in Greene Township, the Oregon Bridge Co., \$95; Root bridge in Champion, R. F. Moran, \$936; Berne bridge in Bloomfield, N. P. Hoffman, \$1,386.

Erie, Pa.—The Erie Car Works has been awarded contract by Water Commissioners for extending steel truss bridge from end of water works park, north 236 ft. to dummy situated in the harbor. Cost of work is estimated at \$3,025.

MISCELLANEOUS

Mobile, Ala.—Sum of \$5,000,000 has been asked for State harbor improvement.

San Jose, Cal.—Specifications and sample of iron street signs with enamel surface in blue with white letters and plan for placing them have been accepted subject to approval of city engineer and bids will be advertised for. Signs and their placing were suggested by Rotary Club. Plan calls for 750 signs.

Pensacola, Fla.—In accordance with resolution which was introduced, read and adopted, bids for bond issue will be received and opened on Aug. 2, this being for \$30,000 issue recently voted, for truck house and stable, and water works station house.

Indianapolis, Ind.—Bond issue of \$160,000 has been authorized to pay county's share of track elevation.

Augusta, Me.—Order appropriating \$325 for pressure tank wagon for use in oiling streets, provided equal amount was raised by private subscription, has received final passage.

Boston, Mass.—Council has passed to second reading loan order for \$200,000 for extension and improvement of Ward 19 playground and order for \$100,000 for completion of Ronan Park, Meeting House Hill, Dorchester.

St. Cloud, Minn.—Bids for a new two-cylinder gas tractor to be used in street work have been opened at meeting of City Commission. Bids were all referred to commissioner of streets and public improvements and salesmen will be asked to demonstrate their machines. Bids were on different makes of machines and ranged as follows: J. I. Case Co., a 12-25 tractor at \$1,275; a 20-40 at \$1,905; a 30-60 at \$2,350; Grinols Co., a 12-24 at \$775; George E. Gulde, a Hart Paar at \$850; H. Weyrauch, a 12-25 at \$1,527.50.

Meridian, Miss.—Total of lowest bids offered for construction, heating and lighting of new city jail, amount to \$11,297.95. Lowest bids were as follows: Standard Construction Company, Meridian, building complete except heating, plumbing, wiring and painting, \$8,173;